

Why DELTA MACHINE TOOLS CUT COSTS FOR INDUSTRIAL USERS

● Delta machine tools have found their way into thousands of industrial and commercial shops all over the world. In some production shops, they form the only equipment. In others, they are used to relieve or supplement larger machines. In all types of shops, they are standing up and making performance records equal to machines that cost many times as much. There are definite reasons why these modern tools are so highly favored for industrial use, and some of these are given below.

Low First Cost: Manufactured under modern production conditions with the finest of high-production equipment—like the modern automobile—these machines cost less for the same production value than heavier machines made up either in small lots or on special order. While we do not claim that modern light machine tools will replace heavier machines on every type of work, still there are many cases in which they will actually out-perform heavier, more expensive equipment, due to their more modern design, the use of self-sealed ball bearings, etc.

Economical Operation: They require relatively smaller motors than those required by heavier, older machinery. In most cases the power required ranges from $\frac{1}{8}$ to $\frac{3}{4}$ H. P.—rarely over $1\frac{1}{2}$ H. P. This means lower power cost.

Low Maintenance Cost: Since the cost of the original machine is low, the cost of replacement parts is also low, thus cutting upkeep costs. In addition, our machines have shown remarkable stamina under production conditions, and with our use of sealed-for-life bearings, maintenance costs are practically nil.

Reduced Labor Costs: Since these machines are so portable and adaptable, in many cases it is possible to set one of these machines alongside another machine on which the operation is slow and time-consuming. The operator may then perform one or several operations on the Delta machine while waiting for the completion of the cut or other operation on the other machine. And these additional

operations are obtained at no additional labor cost.

Flexibility: Due to the low cost of the standard parts of Delta machines, they can be used to make up special-purpose machines at a considerable saving in cost. Many of the largest and most progressive shops in the country, for example, use standard Delta drill-press heads in special drilling machines of their own design. These heads cost only a fraction of what it would cost to produce them in the user's own shop. Complete machines, too, can be adapted to special operations by a few inexpensive changes in the user's own shop.

Portability: Since in most cases each Delta machine is equipped with its own motor, it can be moved instantly to any place in the shop or production line where it will be most effective. This reduces the initial tooling cost in many production shops, and in many plants making a wide variety of products, enables the best layout to be used for any sequence of operations at the lowest possible expense.

Adaptability: Where changes in production requirements must be made quickly, the portability and flexibility of Delta machine tools make them indispensable. For example, if a couple of extra spindles are required on a multiple drilling operation, two of our drill presses can be set up, one on each side of the regular multiple drill, and the extra spindles thus obtained at minimum cost. It is also possible to group a number of our drill presses, either temporarily or permanently, to make up a multiple drilling unit for special operations.

These are only a few of the reasons why it pays the industrial user to purchase Delta Machine Tools.

Remember—Other machines may look like Delta's on casual inspection, but the hidden value of Delta design, as well as the more obvious advantages of the machines, make Delta machines, dollar for dollar, the best light power tools you can purchase for any purpose.

DELTA MACHINES ARE MANUFACTURED AND SOLD UNDER THE FOLLOWING PATENTS EITHER OWNED BY DELTA OR UNDER WHICH DELTA IS LICENSED. OTHER U. S. AND FOREIGN PATENTS ARE PENDING.

1,697,669	1,910,651	1,967,791	2,020,222	2,085,131	2,210,135	Des. 99,614	340,751—1934
1,790,288	1,930,022	1,969,827	2,025,834	2,085,235	2,232,149	Des. 102,402	314,585—1931
1,830,813	1,938,548	1,975,562	2,032,233	2,085,236	2,240,426	Des. 105,429	346,174—1934
1,839,647	1,938,549	1,984,500	2,038,810	2,099,321	2,265,407	Des. 105,621	346,175—1934
1,877,705	1,947,885	1,992,726	2,040,718	2,108,086	2,265,408	Des. 107,805	351,531—1935
1,894,010	1,959,199	2,004,678	2,041,578	2,122,966	Des. 85,847	Des. 109,628	354,273—1935
1,896,924	1,963,688	2,007,887	2,045,422	2,168,282	Des. 89,818	Des. 117,460	354,274—1935
1,902,270	1,964,651	2,016,843	2,069,395	2,193,946	Des. 94,788	Des. 117,461	365,682—1937
1,906,190	1,964,652	2,020,219	2,073,430	2,202,878	Des. 98,280	Canadian Patents	370,828—1937

THE DELTA MANUFACTURING CO., 600-634 E. VIENNA AVE., MILWAUKEE, WIS.

Export Department, 38 Pearl St., New York, N. Y. (Address All Canadian Communications to Milwaukee Office.)

All prices F. O. B. factory, Milwaukee. Prices shown in the latest price sheet supersede all prices previously quoted. All prices subject to change without notice. The right is reserved to make changes in design or equipment at any time, without incurring any obligation to install these on machines previously sold, and to discontinue models of machines, motors or accessories at any time without notice. Any sales tax imposed subsequent to the publication of this catalog will be added to the quoted prices.

DRILL PRESSES

Power Feed	5, 6
17-inch	7, 8, 9
Multiple Spindle	9, 13, 14
14-inch	8, 9, 10, 12

5

CUT-OFF MACHINES

Non-Ferrous	17
Abrasive	18
Wood	18
Accessories	17, 18

17

GRINDERS

Carbide Tool	19
Standard	20, 21
Accessories	19, 20, 21

19

BAND SAWS

Metal Cutting	22, 23
Wood Cutting	24
Accessories	23, 24

23

ABRASIVE FINISH. MACH.

6" Belt Type	25
12" Disc Type	26
Accessories	25, 26

25

CIRCULAR SAWS

10" Tilting Arbor	28, 29
10" Tilting Table Saw	30, 31
8" Tilting Table Saw	32, 33
Accessories	29, 33, 34, 35

29

JOINTERS & COMB. UNITS

Jointers	36, 37
Combinations	38
Accessories	37, 38

37

SCROLL SAWS

Multi-Speed Saw	40, 41
Four Speed Saw	40, 41
Accessories	41

41

SHAPERS

No. 1340 Heavy Duty	42, 43
No. 1180 Light Duty	44
Accessories	45, 46

43

LATHES

11" Cast Iron Bed	47
12" Cast Iron Bed	47
Metal Working	49
Accessories	48, 49

47

MISC. ACCES. & ATTACH.

Surface Plates and Sanding Drums	50
Belts, Pulleys, Light Attach., Etc.	51, 52

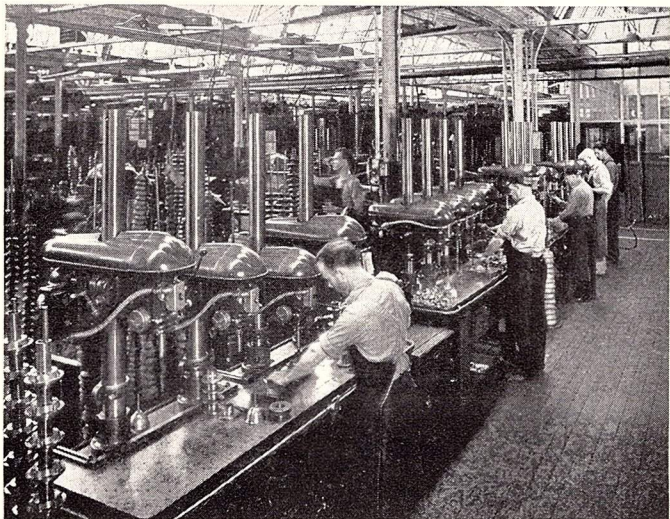
51

MOTORS

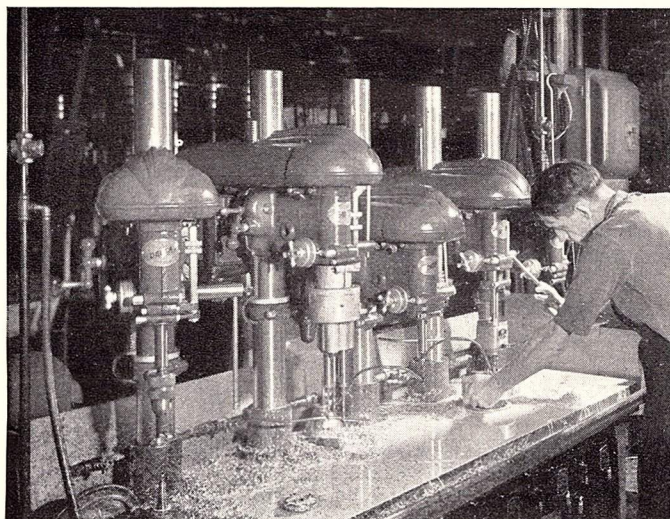
Standard Motors	54
Special Appl. Motors	55
Switches & Accessories	55

53

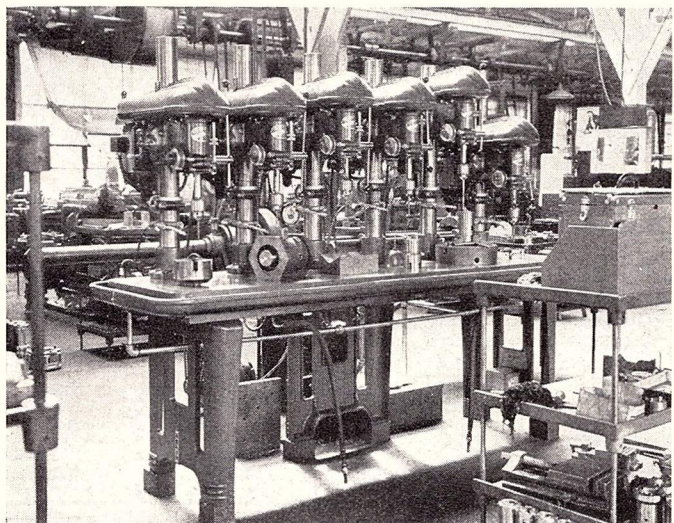
INDUSTRY RELIES UPON DELTA MACHINES TO PROVIDE ACCURATE AND LOW-COST OPERATION ON REGULAR PRODUCTION WORK



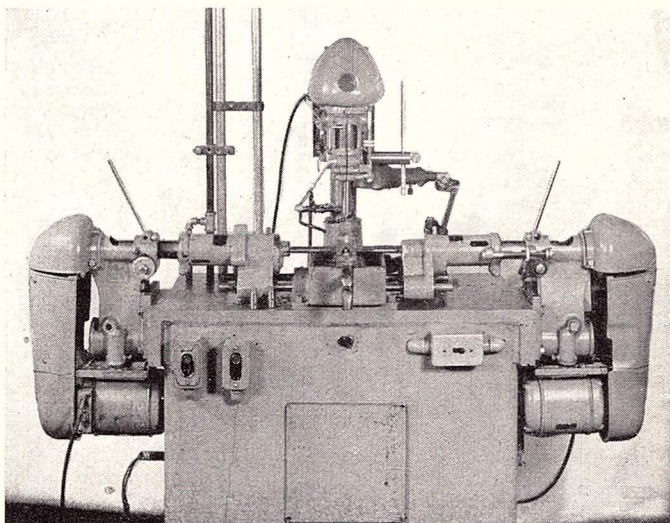
Kearney & Trecker, Milwaukee use these Delta Drill Presses on regular production work. Delta Grinders and Cut-Off Machines also help increase production and cut costs in this famous shop.



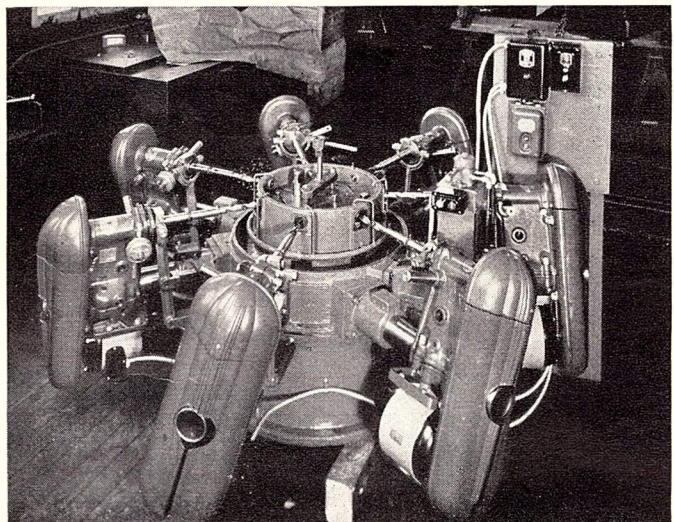
Evinrude Motors use a large number of Delta machines. This is a 5-Spindle Drill Press using the sectional table. Dozens of other Delta machines are also used in this high-production plant.



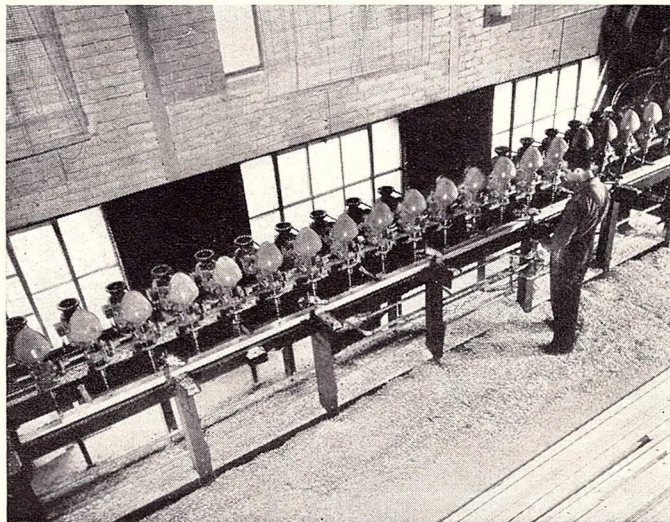
Landis Machine Company demands the finest in accuracy. Here is a 6-Spindle Sectional Table Set-Up. Note the use of the newly developed coolant pump and the adjustable nozzles.



General Motors has made many special setups, using standard Delta Drill Press Heads and Columns. The horizontal heads carry double spindles. This set-up is used in the Diesel Engine Division.



International Tool Co. has made many of these special purpose machines for the Aircraft Industry. This seven head set-up is used for drilling, chamfering and reaming valve tappet holes.



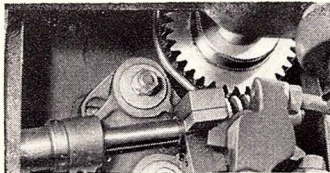
An adaptation of Delta drill press heads at the A. W. Flint Co. where over a mile of ladders are produced each day. A turn of the handle and 20 holes are drilled at once. This idea is used in many plants.

(FOR PRICES SEE ATTACHED PRICE LIST)

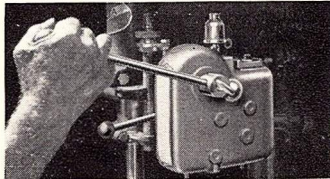
THE DELTA MANUFACTURING COMPANY • MILWAUKEE, WIS.

NEW

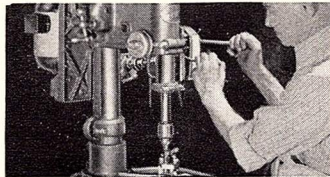
Power Feed 17 inch Drill Presses Speed Up Production



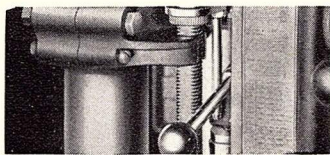
Husky Bronze Worm Wheel . . . and hardened and polished Worm Gear insure long life.



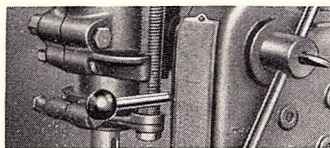
Rapid Traverse of Handle. Drill can be quickly brought down from the normal position.



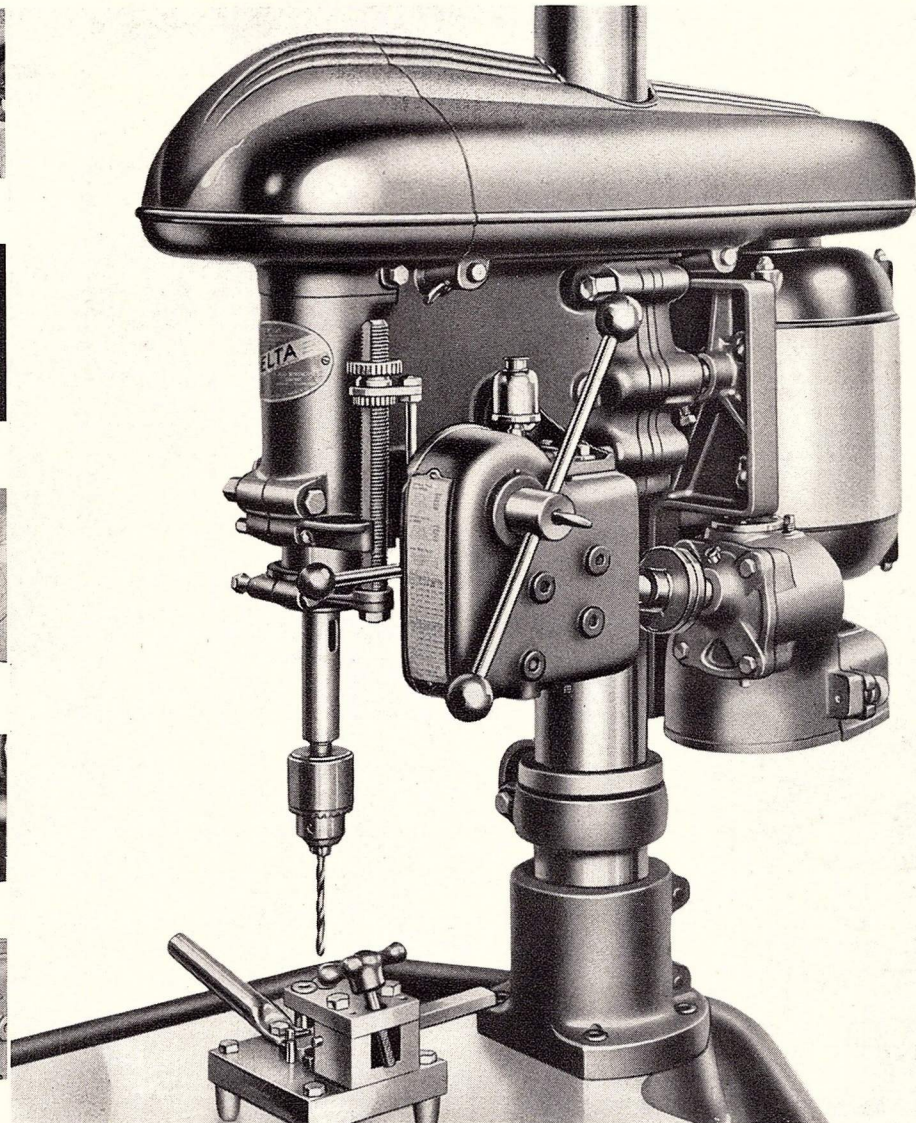
Manual Feed or Power Feed. No changed parts! Nothing to remove!



Automatic Stop and Return. Adjustable to any job.



Operating Power Feed Handle is conveniently located.



THESE NEW POWER FEED DRILL PRESSES SAVE TIME AND CUT OPERATING COSTS

Carefully engineered, these Power Feed Drill Presses employ a husky worm driven mechanical power feed, driven directly from the motor. Special hardening and polishing of the worm gear provides additional strength—insures long, satisfying service.

As a time saver, these New Power Feed Drill Presses are tops. The operator can bring the drill down to the work in one swift motion, by hand, and with a flip of the power lever set the machine for the power feed. Then, while the drill press completes the drilling cycle, he can pass to another operation, loading another jig or working on another spindle. Upon completion of the drilling operation the drill automatically returns to its original position. The automatic stop assures uniform depth of holes to close tolerance.

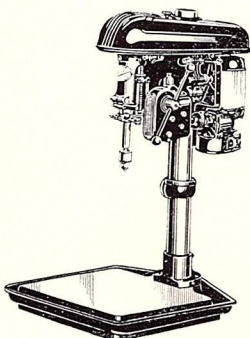
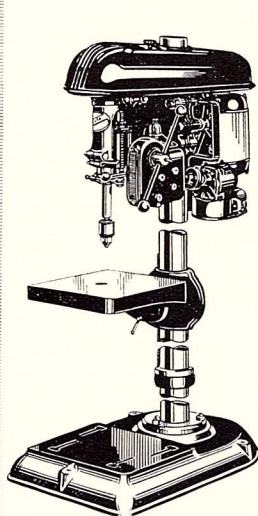
There are eight rates of feed for each spindle speed, which means that the correct rate of feed for your drilling operation is always available. Two cast iron 4-step cone pulleys and a special belt tension release built into guard make speed changes quick and safe.

Sensitive hand drilling and heavy power feed drilling operations are handled with equal ease and accuracy. A safety lock prevents damage to drill press when power feed is disengaged. A flip of the power lever and the machine is set for the power feed; another flip of the lever and it is back on hand feed. Speedy . . . simple . . . and safe.

Available in either single or multiple spindle units, these New Power Feed Drill Presses can be powered with either our standard or NEMA frame motors. Their low cost and long life coupled with their speed of operation and the savings they permit in manufacturing costs, make them the machines you'll want to help you increase your production. See them! Compare them! . . . and you'll buy them!

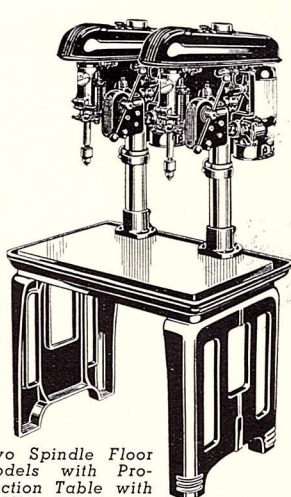
THE DELTA MANUFACTURING COMPANY • MILWAUKEE, WIS.

Specifications of the New 17 inch Power Feed Drill Presses

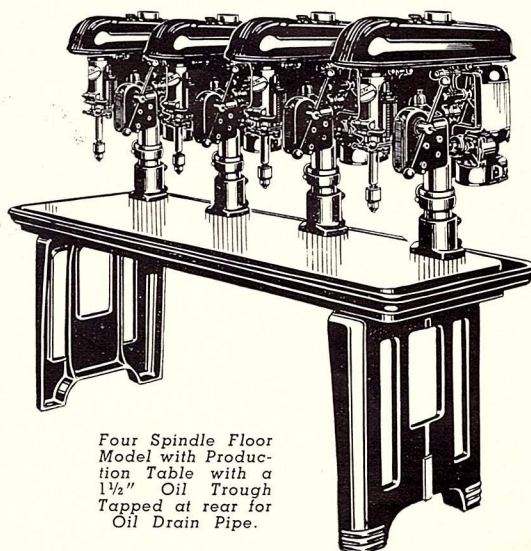


Above: Single Spindle Bench Model, with Production Table.

Left: Single Spindle Floor Model with Tilting Table.



Two Spindle Floor Models with Production Table with a 1 1/2" Oil Trough Tapped at rear for Oil Drain Pipe.



Four Spindle Floor Model with Production Table with a 1 1/2" Oil Trough Tapped at rear for Oil Drain Pipe.

FEED CHART

Showing rate of feed per revolution of spindle on both slo- and high-speed models.

HI-SPEED		SLO-SPEED	
R.P.M. 4750			2240 R.P.M.
R.P.M. 2750			1450 R.P.M.
R.P.M. 1750			935 R.P.M.
R.P.M. 1150			600 R.P.M.
R.P.M. 700			385 R.P.M.

SPINDLE PULLEY	
1	1
2	2
3	3
4	4

Small Pulley on Worm Shaft Small Pulley on Motor

SMALL PULLEY ON MOTOR				
R.P.M. Slow Speed Machine	Feed Per Rev. of Spindle			
	1st Step	2nd Step	3rd Step	4th Step
385	.0060	.0075	.0114	.0156
600	.0038	.0048	.0073	.0100
935	.0024	.0031	.0044	.0064
1450	.0016	.0020	.0030	.0041
2240	.0010	.0013	.0020	.0027

R.P.M. High Speed Machine		Feed Per Rev. of Spindle			
1st Step	2nd Step	3rd Step	4th Step		
700	.0033	.0041	.0063	.0086	
1150	.0015	.0019	.0038	.0040	
1750	.0011	.0016	.0025	.0034	
2750	.0008	.0010	.0016	.0022	
4750	.0005	.0006	.0009	.0013	

SMALL PULLEY ON WORM SHAFT				
R.P.M. Slow Speed Machine	Feed Per Rev. of Spindle			
	1st Step	2nd Step	3rd Step	4th Step
385	.0350	.0270	.0197	.0146
600	.0225	.0176	.0126	.0092
935	.0135	.0104	.0081	.0059
1450	.0093	.0072	.0052	.0038
2240	.0061	.0046	.0034	.0025

R.P.M. High Speed Machine		Feed Per Rev. of Spindle			
1st Step	2nd Step	3rd Step	4th Step		
700	.0195	.0148	.0108	.0079	
1150	.0090	.0069	.0051	.0037	
1750	.0077	.0059	.0043	.0031	
2750	.0049	.0038	.0027	.0020	
4750	.0028	.0022	.0016	.0012	

You Get All These Features:

1. Husky worm drive—hardened and polished for long life.
2. Automatic stop and return, adjustable to any job.
3. Hand or power feed selected instantly.
4. Safety Lock—Protects Drill Press when Power Feed is disengaged.
5. Eight rates of feed for each spindle speed.
6. Special power feed belt tension release built into guard.
7. Automatic stop assures uniform depth of holes to close tolerance.
8. Completely guarded.
9. Available in single and multiple spindle units (any number of spindles).
10. Powered with either Delta or NEMA frame motors.
11. . . . plus low cost, low upkeep and all of the other outstanding features found in Delta Drill Presses.

SPECIFICATIONS

SINGLE SPINDLE FLOOR AND BENCH MODELS—Floor Model 66" high. Bench Model 42 1/2" high, 18" wide, 27" front to rear. 10"x13 3/4" floor base table surface; 11"x12" tilting table floor model; 16"x18" production table bench model; 23 1/2"x26 1/2" production table overall. 3 1/2"x60" column. Capacity: 34" Spindle to table, floor type, 44 1/2" Spindle to base, floor type; 26 1/2" Spindle to table, bench type. Quill has 4 1/2" stroke. Drilling capacity is 3/4" in cast-iron. Built-in depth stop gauge. Depth scale or spindle return spring housing. Mechanical Power Feed. Automatic Stop and Return.

TWO AND FOUR SPINDLE MODELS—Two-spindle table 29 1/2"x41 1/2", surface 23 1/2"x36". 32" high. Four-spindle table 28 1/2"x82 1/2", surface 23 1/2"x77". 32" high. Overall height 66". Front to Rear 27". Center to center between spindles 18". Column diameter 3 1/2". Maximum distance chuck to table 26 1/2". Table has 1 1/2" oil trough and tapped at rear for 1/2" oil drain pipe. Quill has a 4 1/2" stroke. Drilling capacity: 3/4" in cast-iron. Built in depth gauge. Depth scale or spindle return housing. Mechanical Power Feed. Automatic Stop and Return.

- No. 30 100 V-Belt for use with NEMA frame motors up to 16 1/8" overall length. Code Word BELTZ.
No. 30 103 V-Belt for use with Delta motors. Code Word BELTI

MOTORS FOR LIGHT AND MEDIUM DUTY

- 64 710 3/4 H.P. R.-I. A.C. Ball Brg. 110/220 V. 60 Cy.
68 710 3/4 H.P. D.C. 115 V.

MOTORS FOR HEAVY DUTY

- 64 910 1 H.P. R.-I. A.C. Ball Brg., 110/220 V. 60 Cy.
66 920 1 H.P. 3 Ph. A.C. Ball Brg. 220/440V. 50/60 Cy.
68 910 1 H.P. D.C. 115 V.

For 3 Phase Motors use No. 1320 3 Phase Manual Starter with No. 1322 Mounting Parts. Use No. 1332 Switch Rod for Single Phase Motors.

See pages 53 to 55 for motors.

POWER FEED Floor Type Drill Press with Table Raising Mechanism

"SLO-SPEED" MODELS: 385, 600, 935, 1450 and 2240 R. P. M.

- No. P-1370 No. 2 Morse. Std. Tilt Table. DRIQA...
No. P-1382 No. 2 Morse. 1372 Prod. Table. DRIQB...
No. P-1376 1/2" Jacobs. Std. Tilt Table. DRIQC...
No. P-1383 1/2" Jacobs. 1372 Prod. Table. DRIQD...
"HIGH SPEED" MODELS: 725, 1150, 1750, 2700 and 4400 R. P. M.
No. P-1370-H No. 2 Morse. Std. Tilt Table. DRIQE...
No. P-1382-H No. 2 Morse. 1372 Prod. Table. DRIQF...
No. P-1376-H 1/2" Jacobs. Std. Tilt Table. DRIQG...
No. P-1383-H 1/2" Jacobs. 1372 Prod. Table. DRIQH...

POWER FEED Bench Type Drill Press with Head Raising Mechanism

"SLO-SPEED" MODELS: 385, 600, 935, 1450 and 2240 R. P. M.

- No. P-1375 #2 Morse. Prod. Style Bench Base. DRIQI...
No. P-1377 1/2" Jacobs. Prod. Style Bench Base. DRIQJ...
"HIGH SPEED" MODELS: 725, 1150, 1750, 2700 and 4400 R. P. M.
No. P-1375-H #2 Morse. Prod. Style Bench Base. DRIQK...
No. P-1377-H 1/2" Jacobs. Prod. Style Bench Base. DRIQL...

All models include streamlined belt guard. Slo-Speed models include No. 520 V-belt and No. 1311 motor pulley. High-speed models include No. 501 V-belt and No. 1312 motor pulley. Above listings do not include motor or switch.

Power Feed, Multiple Spindle Type Drill Press with Head Raising Mechanism

"SLO-SPEED" MODELS: 385, 600, 935, 1450 and 2240 R. P. M.

- No. P-1545 2 Spindle. No. 2 Morse Taper. DRIQM...
No. P-1546 2 Spindle. 1/2" Jacobs. DRIQN...
No. P-1555 4 Spindle. No. 2 Morse Taper. DRIQO...
No. P-1556 4 Spindle. 1/2" Jacobs. DRIQP...
"HIGH-SPEED" MODELS: 725, 1150, 1750, 2700 and 4400 R. P. M.

- No. P-1547 2 Spindle. No. 2 Morse Taper. DRIQQ...
No. P-1548 2 Spindle. 1/2" Jacobs. DRIQR...
No. P-1557 4 Spindle. No. 2 Morse Taper. DRIQS...
No. P-1558 4 Spindle. 1/2" Jacobs. DRIQT...
All models include streamlined belt guard and cast iron legs No. 1399. "Slo-Speed" models include No. 520 V-Belt and No. 1311 motor pulley. High speed models include No. 501 V-belt and No. 1312 motor pulley. Above listings do not include motor or switch.

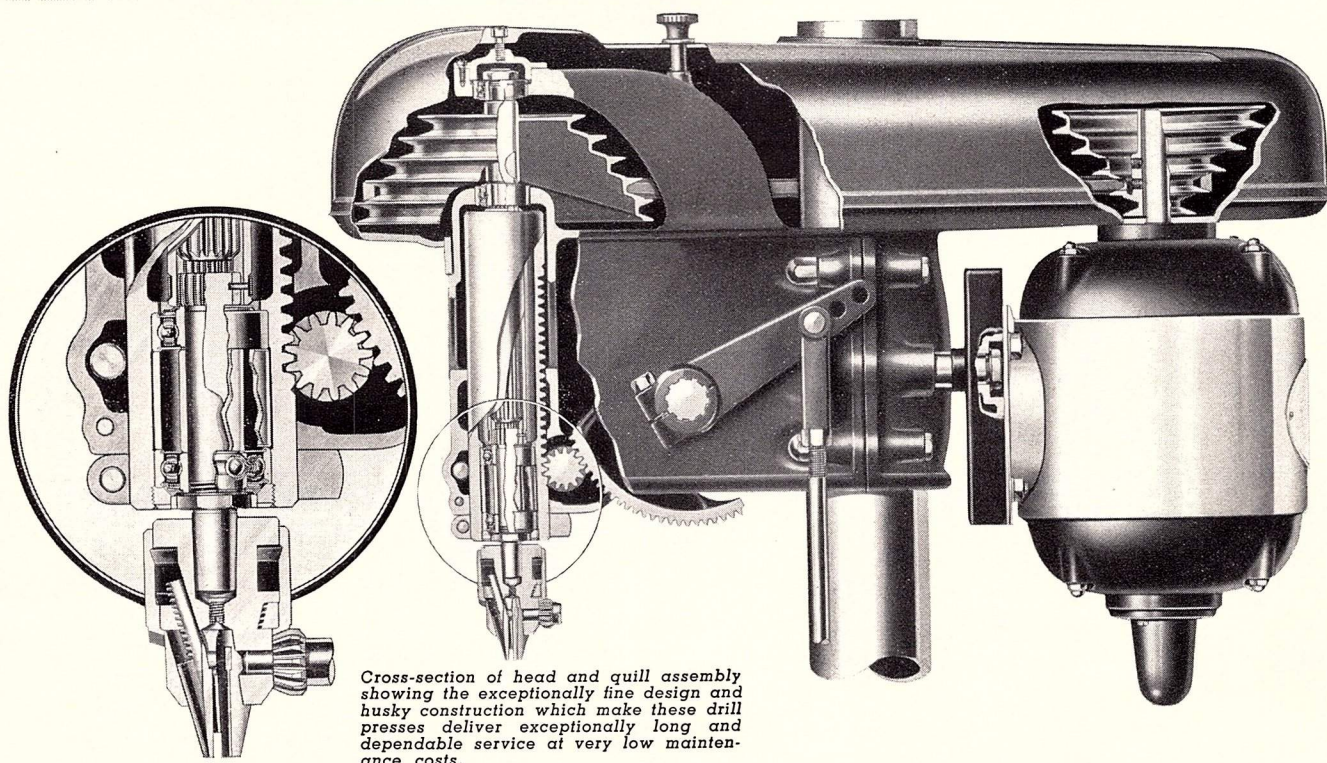
Power Feed Type 17" Drill Press Heads

- No. P-1378 17" Head. Slo Speed #2 Morse. DRIQU...
No. P-1378-H 17" Head. Hi. Speed #2 Morse. DRIQV...
No. P-1379 17" Head. Slo Speed, 1/2" Jacobs. DRIQW...
No. P-1379-H 17" Head. Hi. Speed, 1/2" Jacobs. DRIQX...

(FOR PRICES SEE ATTACHED PRICE LIST)

THE DELTA MANUFACTURING COMPANY • MILWAUKEE, WIS.

These Features Make the 17 inch Drill Press the Favorite in Hundreds of Modern Plants!



Cross-section of head and quill assembly showing the exceptionally fine design and husky construction which make these drill presses deliver exceptionally long and dependable service at very low maintenance costs.

THE introduction of this 17" drill press marked a long step forward in medium sized drill press design, because it offered entirely new standards of value and operation.

A few of these features are as follows:

ACCURATE SPINDLE

The lower end of the spindle is machined to form a 16-tooth automobile type spline fitting into a husky sleeve of large diameter, internally splined to fit the spindle. The exceptionally long bearing between sleeve and spindle practically eliminates wear and retains the original accuracy of the fit. In addition it insures very sensitive action of the spindle.

SEALED-FOR-LIFE BEARINGS

The spindle pulley runs in two sealed-for-life ball bearings and takes all belt pull so that none is transmitted to the spindle. The spindle is also carried in two sealed-for-life ball bearings set close together near the bottom of the quill to assure maximum stiffness and to eliminate spindle whip.

WELL GUARDED

The spindle does not project through the pulley but is keyed to it as shown above. This permits the inclosure of both belt and pulleys in a guard of exceptionally neat design.

SPINDLE EASILY CHANGED

The quill has a long bearing in the head and is completely enclosed. The entire spindle assembly may be simply and easily removed by loosening the threaded lock ring. Either the

No. 2 Morse taper spindle or a $\frac{1}{2}$ " geared chuck may be used.

UNIQUE SPRING HOUSING

The spindle return spring housing is provided with a worm and gear wind to eliminate danger of "fly-back" when adjusting spring tension. The spring housing also has a depth gauge.

RAISING MECHANISMS

The raising mechanisms for both the head and table are equipped with ball bearings which assure ease of adjustment.

HUSKY CONSTRUCTION

These drill presses as you can see by the photographs are husky throughout, weighing as high as 400 pounds which shows their heavy construction. Advanced engineering and advanced design have distributed this weight correctly so that it is properly proportioned.

DOLLAR VALUE

The skill, knowledge and experience which go into the design of these drill presses determines their actual value to you. When compared with other units you will find that you get MORE in these drill presses than in any similar machine of equal capacity.

THE DELTA MANUFACTURING COMPANY • MILWAUKEE, WIS.

17 inch Industrial Drill Press Offers Entirely New Standards

THIS radically new type of 17" drill press met with wide and instant acceptance since its introduction. The advanced engineering evident throughout the design; the fine, accurate workmanship; the wide adaptability of the machine and its many built-in improvements have led to its adaptation by hundreds of manufacturers as a standard production tool.

Many shops use them in batteries of from five to twenty on straight production work, in addition to using them in the toolroom and general machine shop. They can be installed in a few minutes anywhere they are needed, can be used to supplement multiple-spindle machines where additional spindles are required, can be adapted easily and cheaply for special operations, replacing expensive single-purpose machines—they have so many uses and are so economical in first cost, power consumption and maintenance that no progressive shop can afford to be without them.

FLOOR TYPE with Table Raising Mechanism

Cat. No.	Type of Spindle	Description	Ship. Wt. Lbs.	Code Word	Price
"SLO-SPEED" MODELS: 385, 600, 935, 1450 and 2240 R.P.M.					
1370	No. 2 Morse	Std. Tilt Table as Illus.....	340	DRILA	
1384	No. 2 Morse	Std. Tilt Table and Foot Feed...	374	DRILO	
1382	No. 2 Morse	1372 Prod. Table.....	380	DRILM	
1386	No. 2 Morse	1372 Prod. Table & Foot Feed	414	DRILQ	
1376	1/2" Jacobs	Std. Tilt Table.....	340	DRILG	
1385	1/2" Jacobs	Std. Tilt Table and Foot Feed...	374	DRILP	
1383	1/2" Jacobs	1372 Prod. Table.....	380	DRILN	
1387	1/2" Jacobs	1372 Prod. Table and Foot Feed	414	DRILR	

HIGH SPEED MODELS: 725, 1150, 1750, 2700 and 4400 R.P.M.

1370-H	No. 2 Morse	Std. Tilt Table as Illus.....	340	DRIAA	
1384-H	No. 2 Morse	Std. Tilt Table and Foot Feed...	374	DRIAI	
1382-H	No. 2 Morse	1372 Prod. Table.....	380	DRIAJ	
1386-H	No. 2 Morse	1372 Prod. Table and Foot Feed	414	DRIAK	
1376-H	1/2" Jacobs	Std. Tilt Table.....	340	DRIAG	
1385-H	1/2" Jacobs	Std. Tilt Table and Foot Feed...	374	DRIAL	
1383-H	1/2" Jacobs	1372 Prod. Table.....	380	DRIAM	
1387-H	1/2" Jacobs	1372 Prod. Table & Foot Feed...	414	DRIAN	

BENCH TYPE with Head Raising Mechanism

"SLO-SPEED" MODELS: 385, 600, 935, 1450 and 2240 R.P.M.

1375	No. 2 Morse	Prod. Style Bench Base.....	400	DRILF	
1377	1/2" Jacobs	Prod. Style Bench Base.....	400	DRILH	

HIGH SPEED MODELS: 725, 1150, 1750, 2700 and 4400 R.P.M.

1375-H	No. 2 Morse	Prod. Style Bench Base.....	400	DRIAF	
1377-H	1/2" Jacobs	Prod. Style Bench Base.....	400	DRIAH	

All Models include Streamlined Belt Guard. Slo-Speed Models include No. 520 Belt and No. 1311 Motor Pulley. High-Speed Models include No. 501 Belt and No. 1312 Motor Pulley. Above Listings Do Not Include Motor or Switch. See Pages 48 and 49.

MOTORS RECOMMENDED:

LIGHT DUTY: 64 510 1/2 H.P. R.I. A.C. 110/220 V. 60 Cy.
66 520 1/2 H.P. 3 Ph. A.C. 220/440 V. 50/60 Cy.
68 510 1/2 H.P. D.C. 115 V.

MEDIUM DUTY: 64 710 3/4 H.P. R.I. A.C. 110/220 V. 60 Cy.
66 720 3/4 H.P. 3 Ph. A.C. 220/440 V. 50/60 Cy.
68 710 3/4 H.P. D.C. 115 V.

HEAVY DUTY: 64 910 1 H.P. R.I. A.C. 110/220 V. 60 Cy.
66 920 1 H.P. 3 Ph. A.C. 220/440 V. 50/60 Cy.
68 910 1 H.P. D.C. 115 V.

For 3 Ph. motors use No. 1320 or No. 1329 3 Ph. starters with No. 1322 mounting parts. Use No. 1332 switch rod for single phase motors.

See pages 53 to 55 for motors and switch parts.

No. 968 1/2" Geared Jacobs Chuck with a No. 2 Morse Taper Shank.....
Ship. Wt. 2 1/2 lbs.—Code Word—CHGEA.

Note: Order geared-chuck models where straight-shank drills only are to be used. Where taper-shank drills, or both taper and straight-shank drills are to be used, specify the models with No. 2 M. T. spindles. Geared-chuck models have greater capacity under the spindle.

No. 1311 Slo-Speed 5 Step Motor Pulley. 3 lbs. PULOW.....

No. 1312 High Speed 5 Step Motor Pulley. 3 lbs. PULOX.....

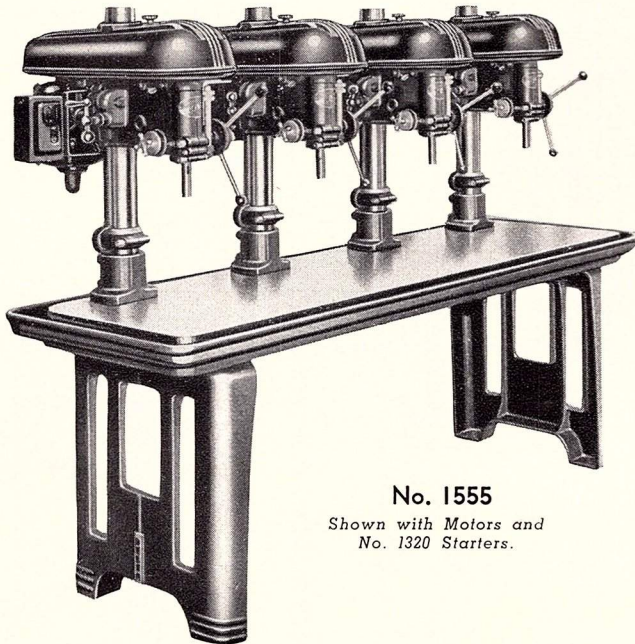
SPECIFICATIONS

Floor Model 66" high. Bench Model 42 1/2" high, 18" wide, 27" front to rear. 10"x13 3/4" floor base table surface; 11"x12" tilting table floor model; 16"x18" production table bench model; 23 1/2"x26 5/8" production table overall. 3 1/2"x60" column. Capacity: 34" Spindle to table, floor type, 44 1/2" Spindle to base, floor type; 26 1/2" Spindle to table, bench type. Quill has 5" stroke. Drilling capacity is 3/4" in cast-iron. Built-in depth stop gauge. Depth scale on spindle return spring housing.

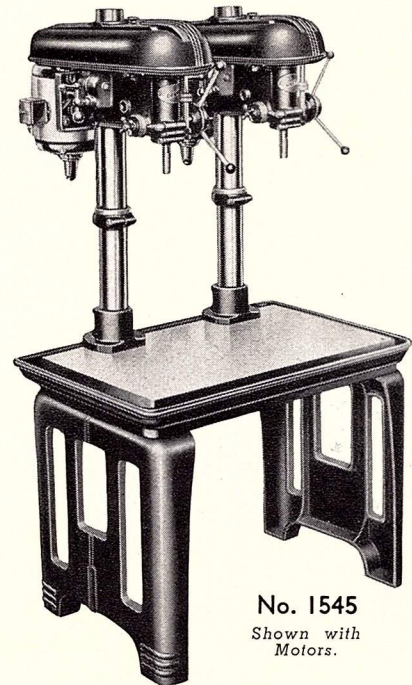
(FOR PRICES SEE ATTACHED PRICE LIST)

THE DELTA MANUFACTURING COMPANY • MILWAUKEE, WIS.

MULTIPLE 17" DRILL PRESSES OFFER MANY ADVANTAGES



No. 1555
Shown with Motors and
No. 1320 Starters.



No. 1545
Shown with
Motors.

Multiple Spindle 17" Drill Presses

The unusual value of the standard single-spindle 17" drill presses has led to a demand for a similar machine of the manufacturing type and the multiple spindle drill presses listed below are the result of this demand. Heads and columns are of the same design and have the same features as the standard bench and floor models. Heads are interchangeable, so that either high or low-speed heads may be used together, or heads with either type of spindle.

Specifications

Same as those listed opposite with exception of base dimensions which are listed here:

Two-spindle table 29½" x 41½", surface 23½" x 36", 32" high. Four-spindle table 28½" x 82½", surface 23½" x 77", 32" high. Center to center between spindles 18". Column diameter 3½". Maximum distance spindle to table 26". Table has 1½" oil trough drilled and tapped at rear for ½" oil drain pipe. Drilling capacity: ¾" in cast-iron.

Cat. No.	No. of Spindles	Type of Spindle	Ship. Wt. in Lbs.	Code Word	Price
"SLO-SPEED" MODELS: 385, 600, 935, 1450 and 2240 R. P. M.					
1545	2	No. 2 Morse	860	TWOSF	
1546	2	½" Jacobs	860	TWOSG	
1555	4	No. 2 Morse	1400	FOURI	
1556	4	½" Jacobs	1400	FOURJ	
HIGH SPEED MODELS: 725, 1150, 1750, 2700 and 4400 R. P. M.					
1547	2	No. 2 Morse	860	TWOSH	
1548	2	½" Jacobs	860	TWOSI	
1557	4	No. 2 Morse	1400	FOURK	
1558	4	½" Jacobs	1400	FOURL	

Prices on all Multiple Spindle Drill Presses are F. O. B. Milwaukee.

All Models include streamlined Belt Guards, Raising Mechanism for Heads and Cast Iron Legs No. 1399. Slo-Speed Models include No. 520 Belt and No. 1311 Motor Pulley. High Speed Models include No. 501 Belt and No. 1312 Motor pulley. Above listings do not include Motor or Switch.

MOTORS RECOMMENDED:

LIGHT DUTY:	64 510	½ H.P. R.I. A.C. 110/220 V. 60 Cy.
	66 520	½ H.P. 3 Ph. A.C. 220/440 V. 50/60 Cy.
	68 510	½ H.P. D.C. 115 V.
MEDIUM DUTY:	64 710	¾ H.P. R.I. A.C. 110/220 V. 60 Cy.
	66 720	¾ H.P. 3 Ph. A.C. 220/440 V. 50/60 Cy.
	68 710	¾ H.P. D.C. 115 V.
HEAVY DUTY:	64 910	1 H.P. R.I. A.C. 110/220 V. 60 Cy.
	66 920	1 H.P. 3 Ph. A.C. 220/440 V. 50/60 Cy.
	68 910	1 H.P. D.C. 115 V.

For 3 Ph. Motors Use No. 1320 or No. 1329 3 Phase Starters with No. 1322 Mounting Parts. Use No. 1332 Switch Rod for Single Phase Motors. See Pages 53 to 55 for Motors and Switch Parts.

(FOR PRICES SEE ATTACHED PRICE LIST)

Drill Press Parts for Special Set-Ups

Heads for the 17" drill press, which can be purchased separately, are ideal for use in special setups and are widely used in production shops. Their low cost makes them more economical than anything for the same purpose that can be made up in toolroom or machine shop, and alert tool engineers and production executives have recognized their outstanding advantages. They can be used in any position, vertical, horizontal or angular, as their self-sealed ball bearing construction eliminates lubrication problems.

Cat. No.	Part	Speed	Spindle & Chuck	Ship. Wt. in Lbs.	Code Word	Price
1378	17" Head	Slo	No. 2 Morse	125	DRILI	
1378-H	17" Head	High	No. 2 Morse	125	DRIH1	
1379	17" Head	Slo	½" Jacobs	125	DRILJ	
1379-H	17" Head	High	½" Jacobs	125	DRIHJ	
1366	17" Mounting Flange with Screws...			9	DRILT	
1367	Column for Floor Type 60" Long....			37	DRILV	
1368	Column for Bench Type 38½" Long....			25	DRILZ	
1399	Cast Iron Legs (Pair).....			195	PRODK	
1513	Bench Table Only, 2 Spin. 17" Drill Press.....			300	DIARI	
1515	Bench Table Only, 4 Spin. 17" Drill Press.....			890	DRIAU	
1391	Set of Parts to change Slo-Speed Drill Press to High Speed.....			7	DRILY	
501	V-Belt for 17" High Speed Drill Press			¾	MORUV	
520	V-Belt for 17" Slo-Speed Drill Press			¾	BELTC	

Production-Type Table for 17" Drill Press (Shown Opposite)

Interchangeable with standard tilting table on the 17" drill press, and fitting the same bracket, this table is intended for use where jigs are used constantly, and where the tilting feature is not desired. Heavy-gray-iron casting 16" x 20½" overall, with a 12½" by 17" table surface. It is provided with a 1½" oil trough all around.

No. 1372 Production Table for 17" Drill Press, to fit Standard Bracket on Floor Machine. Ship. Wt. 70 Lbs. Code Word—DRILC.....

Raising Mechanism for Head or Table (Shown Opposite)

The raising mechanism for the 17" drill press can be supplied separately. Easily installed in any of our 17" drill-press heads.

No. 1380 Raising Mechanism for 17" Drill Press. Consists of Worm Shaft, Worm Gear and Pinion, Ball Handle, Rack, Ball-Thrust Bearing and Collar for Column. Ship. Wt. 9 Lbs. Code Word—DRILK.....

Foot Feed for 17" Floor Models (Shown Opposite)

Quickly and easily installed on floor models of the 17" drill press, the No. 1371 foot feed will be found a great time saver on production work. A finely designed, well built mechanism.

No. 1371 Foot Feed for 17" Floor-Model Drill Press, including Splined Shaft, Gear Segment and Lever, Connecting Rods, Foot Lever and Bracket Studs and Bolt. Ship. Wt. 34 Lbs. Code Word—DRILB.....

THE DELTA MANUFACTURING COMPANY • MILWAUKEE, WIS.

Features of the 14 inch Models

Before you purchase any drill press, make sure it has BOTH a self-aligning drive and a free-floating spindle.

Only Our Patented Design Gives You BOTH of These Features!

WITH the latest and most modern machine equipment, including "diamond-boring" machines as used in our shops, it is an easy matter to bore drill-press bearing housings, quill seats, etc., to close tolerances. But the design of a high-speed telescoping drill-press spindle drive requires more than precision machining—it requires a design that will stay in alignment. And there are a number of factors which make this problem more difficult than it looks.

First, the comparatively long range of telescoping of the spindle and quill; second, the high speed at which the spindle rotates; third, the fact that the quill and spindle must be locked or clamped in various locations; fourth, the fact that the spindle is often subjected to severe side thrusts, and so on. When all these factors are considered, it is obvious that the slightest variation in alignment is likely to produce difficulties.

The mis-alignment encountered in service may be small—perhaps not more than .002"—but we consider that even this slight amount is sufficient to cause trouble in highspeed spindles, and it is this trouble that our patented type of drive is designed to prevent.

In a four-bearing drill press similar to our now obsolete No. 620 machine, you may have a so-called "free-floating" design, in which the belt pull is not transmitted to the spindle. But you do NOT have the self-aligning features of our improved drive (designed to overcome the troubles of the four-bearing type) because these features are patented.

The Spindle Drive STAYS Aligned!

FROM the outside, our driving pulley looks like any other simple pulley. But, as the photos show, it is actually radically different. The pulley itself is carried on a huge sealed-for-life ball bearing, of special deep-groove tight-fitting design, with enormous reserve capacity above that required to take the belt pull, and requiring no lubrication or other attention. The bearing is mounted by means of a special extension of the inner race so that it cannot be sprung. This is very important.

The actual drive of the pulley is transmitted to the spindle through a floating sleeve, with spur-gear teeth cut around its hub. These teeth mesh with an internal gear in the pulley so that the sleeve can "float" in all directions except the driving direction. This floating sleeve drives the spindle through splines fully $3\frac{1}{4}$ " long. The underside of the pulley is covered with a heavy pressed-steel plate, which not only secures the bearing in the pulley, but which also covers the pulley ribs and prevents power-wasting "fan action" and keeps out dirt when the drill head is operated upside-down.

Study the action of the floating sleeve and you will see that you not only get a true "free-floating" drive, but that you also get complete freedom from misalignment troubles due to wear or any other service conditions. This drive stays aligned!

Construction and Assembly of the Drive Pulley

A. Shows the drive pulley with its internal gear, the floating sleeve with its spur gear, the huge ball bearing that carries the pulley and the lower cover plate.

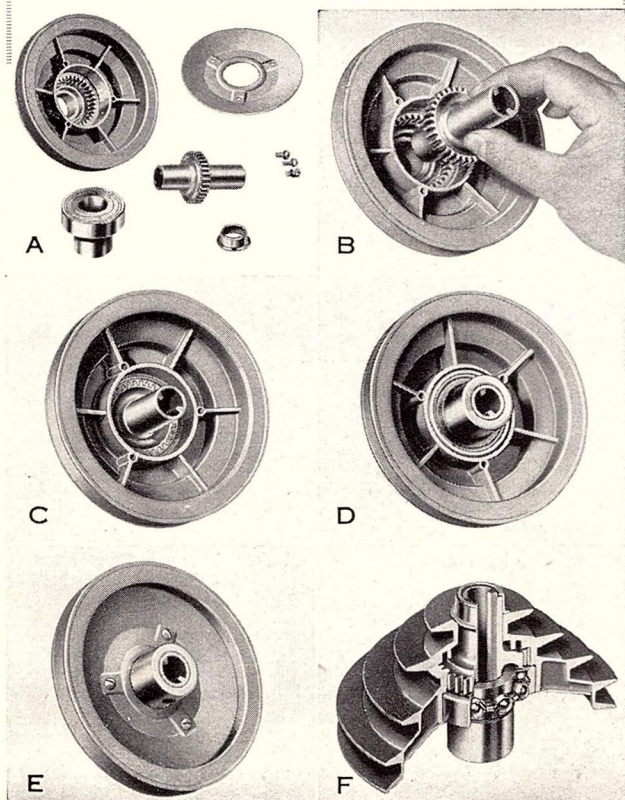
B. How the floating sleeve is engaged with the internal gear in the pulley is shown here. This forms a clutch which permits the sleeve to float in all directions but one.

C. The floating sleeve engaged with the pulley. This forms a positive driving medium for the spindle, but at the same time takes up any minute variations in alignment that may occur in service.

D. The pulley is carried on a large sealed-for-life ball bearing, requiring no lubrication, and with a load capacity far in excess of any pull ever placed on it by the belt.

E. There is no power-wasting fan action in this pulley, because the plate that secures the bearing in place also completely covers the pulley ribs—the final detail of a high-grade design.

F. This photo shows a section through the complete drive and quill assembly.



This 14 inch Drill Press Will Save Time and Cut Costs

THERE are many reasons why this drill press is the one that you should buy because the experience gained during our development of drill presses of this type for industrial purposes insures that it is the finest machine of its kind you can buy.

For industrial use, the advantages of low initial investment, plus very low maintenance and power cost, are so obvious that thousands of industrial shops use these tools for these reasons alone. But there are additional advantages that make them the ideal machines for production use. They are completely portable, so that they require no installation expense and can be set anywhere in the shop to suit changing production conditions. They can be used to supply additional spindles on multi-spindle machines. They can be set up alongside other machines so as to employ the operator's idle time. They can be used to make up complete, self-contained drilling units which actually cost less than conventional jigs. The heads can be used to make up special drilling units at a fraction of the cost of special machines for the same job.

The readily interchangeable spindles mean that a wide variety of work can be done on these drill presses.

"SEALED-FOR-LIFE" Bearings Eliminate Lubrication

No lubrication is ever required on these drill presses because the new Departure bearings used throughout are lubricated and sealed at the factory and need no further attention during their entire life.

Specifications

68" high, 2 3/4" column diameter. 43" table travel. 4" spindle travel. 4 1/4" spindle to table. 47" chuck to base. 10" x 10" table size. Drilling capacity: 1/2" in cast iron. Drills to center of 14" circle.

Furnished with different spindles as listed—other spindles available—see page 10. The Jacobs geared chuck has full No. 60 to 1/2" capacity. These should not be confused with lighter chucks of from 1/8" to 1/2" capacity. All chucks are balanced for high-speed work. Spindles have deep double splines, which insure proper balance and long wear due to their wide area of contact.

14-inch Floor Type Drill Presses

Cat. No.	Type of Spindle	Description	Ship. Wt. Lbs.	Code Word	Price
HIGH SPEED MODELS OF 680, 1250, 2400 and 4600 R. P. M.					
986	No. 1 Morse	Std. Tilt Table	145	NEWMT	
1586	No. 1 Morse	Std. Tilt Table and Foot Feed	187	NEWAD	
1587	No. 1 Morse	1006 Prod. Table	187	NEWAE	
1588	No. 1 Morse	1006 Prod. Table & Foot Feed	230	NEWAF	
989	1/2" Jacobs	Std. Tilt Table	145	NEWJC	
1589	1/2" Jacobs	Std. Tilt Table and Foot Feed	189	NEWAG	
1590	1/2" Jacobs	1006 Prod. Table	192	NEWAH	
1591	1/2" Jacobs	1006 Prod. Table & Foot Feed	230	NEWAJ	
"SLO-SPEED" MODELS OF 470, 780, 1300 and 1950 R. P. M.					
1286	No. 1 Morse	Std. Tilt Table	151	SLOFB	
1886	No. 1 Morse	Std. Tilt Table and Foot Feed	189	SLOBD	
1887	No. 1 Morse	1006 Prod. Table	147	SLOBH	
1888	No. 1 Morse	1006 Prod. Table & Foot Feed	192	SLOBI	
1289	1/2" Jacobs	Std. Tilt Table	151	SLOFC	
1889	1/2" Jacobs	Std. Tilt Table and Foot Feed	230	SLOBI	
1890	1/2" Jacobs	1006 Prod. Table	192	SLOBK	
1891	1/2" Jacobs	1006 Prod. Table & Foot Feed	230	SLOBL	

High Speed Models include No. 387 Belt and No. 985 Motor Pulley.
Slo-Speed Models include No. 430 Belt and No. 985 Motor Pulley.
Above Listings Do Not Include Belt Guard, Motor or Switch.

MOTORS RECOMMENDED:

LIGHT DUTY:	60 310	1/3 H.P. Sp. Ph. A.C. 110 V. 60 Cy.
	62 110	1/3 H.P. Cap. A.C. 110/220 V. 60 Cy.
	66 110	1/3 H.P. 3 Ph. A.C. 220/440 V. 50/60 Cy.
	68 110	1/3 H.P. D.C. 115 V.
MEDIUM DUTY:	62 110	1/3 H.P. Cap. A.C. 110/220 V. 60 Cy.
	66 320	1/3 H.P. 3 Ph. A.C. 220/440 V. 50/60 Cy.
	68 110	1/3 H.P. D.C. 115 V.
	68 110	1/3 H.P. D.C. 115 V.
HEAVY DUTY:	66 320	1/2 H.P. 3 Ph. A.C. 220/440 V. 50/60 Cy.
	68 110	1/3 H.P. D.C. 115 V.

For 3 Ph. Motors Use No. 1320 3 Phase Manual or No. 1329 Magnetic Starter with No. 1322 Mounting Parts.

Use No. 1331 Rod for All Single Phase Motors.

See Pages 53 to 55 for Motors and Switch Parts.

PRODUCTION TABLE for 14-inch Drill Presses

Table surface 11" x 14". Has 1 1/2" drain trough, tapped for drain pipe. Rack and ball thrust bearing fitted with safety hook, prevents accidental dropping of table.

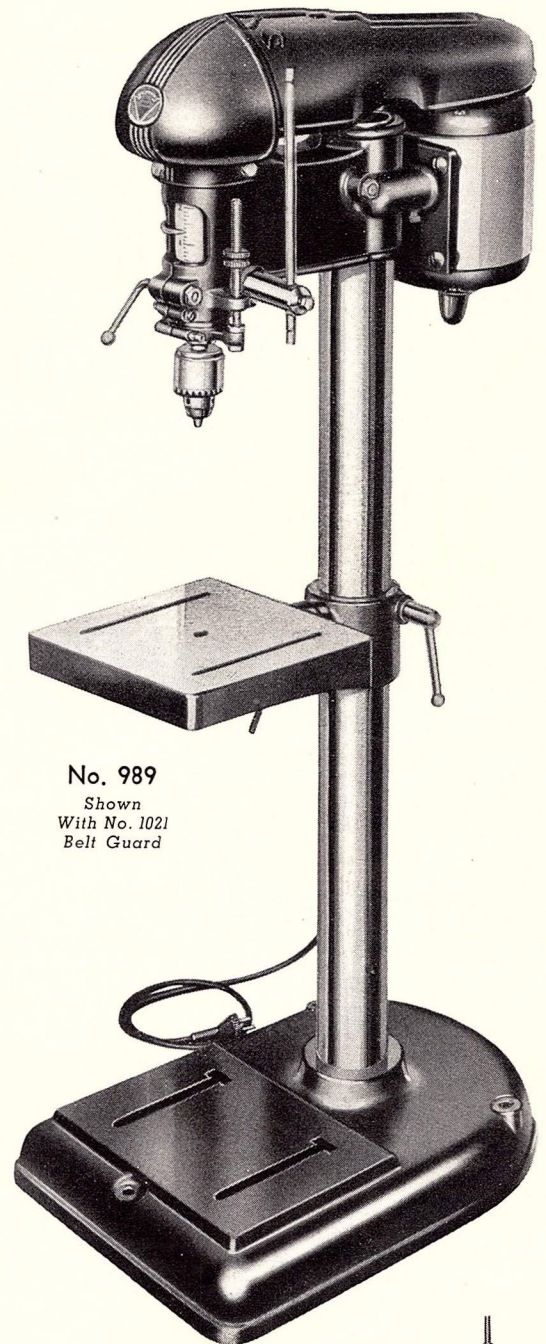
No. 1006 Production Table Assembly, Complete with Raising Mechanism, Rack, Safety Hook, Thrust Bearing and Collar. Sh. Wt. 58 Lbs. Code—NEWPT...

FOOT FEED for 14-inch Models

Thoroughly engineered. Pressure applied to quill parallel to spindle axis—eliminates side thrusts. Speeds up production on drilling and tapping.

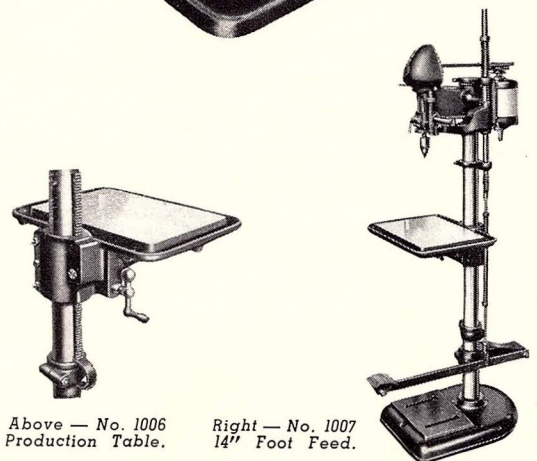
No. 1007 Foot Feed for 14" Drill Press Only, consisting of Foot Lever and Bracket, Connecting Rods and Tube, Two Column Brackets, Shifter Bracket, Shifter Shaft, Two Springs and Adjusting Collar. Sh. Wt. 38 Lbs. Code—NEWFF...

(FOR PRICES SEE ATTACHED PRICE LIST)



No. 989

Shown
With No. 1021
Belt Guard



Above — No. 1006
Production Table.

Right — No. 1007
14" Foot Feed.

THE DELTA MANUFACTURING COMPANY • MILWAUKEE, WIS.

Bench Type 14" Drill Presses

These bench type drill presses have all of the same outstanding features as the floor type units as described on page 11. The head and table are identical to the floor type model except that a shorter column and a lighter base are supplied.

Spindles are readily interchangeable—bearings need never be lubricated because they are lubricated and sealed for life at the factory. The fine design, accurate construction and maximum versatility of these bench type drill presses make them the favorite with all men who know good tools.

SPECIFICATIONS:

36½" high; 2¾" column diameter; 11½" table travel; 4" spindle travel; 11½" spindle to table; 17" chuck to base; 10" x 10" table size; Drilling capacity: ½" in cast-iron; Drills to center of 14" circle. Furnished with different spindles as listed—other spindles available as listed below.

Bench Type 14" Drill Presses

Cat. No.	Type of Spindle	Description	Ship. Wt. Lbs.	Code Word	Price
HIGH SPEED MODELS OF 680, 1250, 2400 and 4600 R. P. M.					
1000	No. 1 Morse	Std. Tilt Table.....	110	BENMT	
999	½" Jacobs	Std. Tilt Table.....	110	BENJC	
1011	½" Jacobs	Production Type Base.....	215	PRODA	
1013	No. 1 Morse	Production Type Base.....	215	PRODC	
995	Keyless	Std. Tilt Table.....	110	NEWBE	
"SLO-SPEED" MODELS OF 470, 780, 1300 and 1950 R.P.M.					
1300	No. 1 Morse	Std. Tilt Table.....	102	SLOBF	
1302	½" Jacobs	Std. Tilt Table.....	102	SLOBG	
1012	½" Jacobs	Production Type Base.....	210	PRODB	
1014	No. 1 Morse	Production Type Base.....	210	PRODD	
1295	Keyless....	Std. Tilt Table.....	102	SLOBE	

High-Speed Models include No. 387 belt and No. 985 motor pulley. Slo-Speed Models include No. 430 belt and No. 985 motor pulley. Above listings do not include belt guard, motor or switch.

MOTORS RECOMMENDED:

LIGHT DUTY:

60 310 ½ H.P. Sp. Ph. A.C. 110 V. 60 Cy.
62 110 ½ H.P. Cap. A.C. 110/220 V. 60 Cy.
66 110 ½ H.P. 3 Ph. A.C. 220/440 V.
50/60 Cy.

68 110 ½ H.P. D.C. 115 V.

MEDIUM DUTY

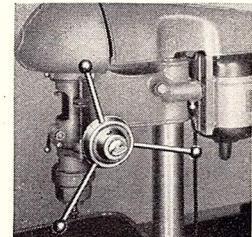
62 110 ½ H.P. Cap. A.C. 110/220 V. 60 Cy.
66 320 ½ H.P. 3 Ph. A.C. 220/440 V.
50/60 Cy.

68 110 ½ H.P. D.C. 115 V.

HEAVY DUTY

66 320 ½ H.P. 3 Ph. A.C. 220/440 V.
50/60 Cy.
68 110 ½ H.P. D.C. 115 V.

For 3 Ph. motors use No. 1320 or No. 1329 3 Ph. starters with No. 1322 mounting parts. Use No. 1331 switch rod for all sin. ph. motors. See pages 53 to 55 for motors & switch parts.



Pilot Wheel For 14" and 11" Drill Presses (Photo Above)

No. 969 Pilot Wheel as illustrated. 4 lbs. NEWFE

Interchangeable Spindles for 14" Drill Presses

One of the many outstanding advantages of the 14" drill press is the fact that the spindles are readily interchangeable. This means that the application of the machine is increased many times. All chucks are balanced for high-speed work. Spindles have deep splines which insure proper balance and long wear.

Cat. No.	Description of Spindle	Wt. Lbs.	Code Wd.	Price
971	Keyless Chuck—Cap. O—17½".....	3½	NESPA	
972	Jacobs Chuck—Cap. No. 60—½".....	3½	NESPB	
973	No. 1 Morse Taper.....	2	NESPC	
974	With ½" Hole for Router Bits.....	2½	NESPD	
977	For Shaper Cutters With ⅝" Hole.....	2	NESPF	
991	For Cup Wheels—(No. 992).....	2	NESPG	

New MULTI-SPEED DRILL PRESS ATTACHMENT

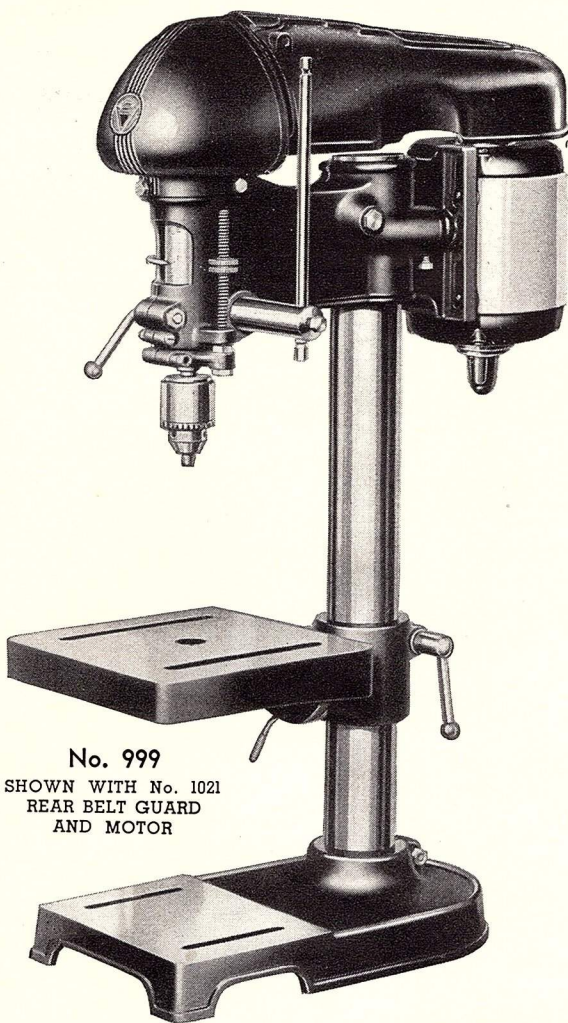
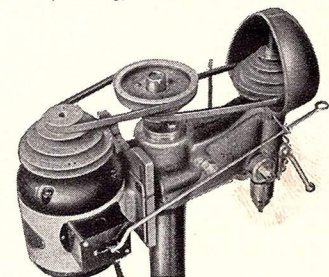
This new attachment for 14" Drill Presses only, provides a wide range of speeds on both the Slo and High-Speed models. It consists of a heavy casting, which mounts in the drill press column together with a cone pulley and two belts. Belt slack is taken up by turning casting so proper tension is always assured.

No. 1028 Multi-Speed attach. for 14" High Speed Drill Presses including column casting, cone pulley and two belts. Speeds of 270 R.P.M. to 4600 R.P.M. Code MULTI.

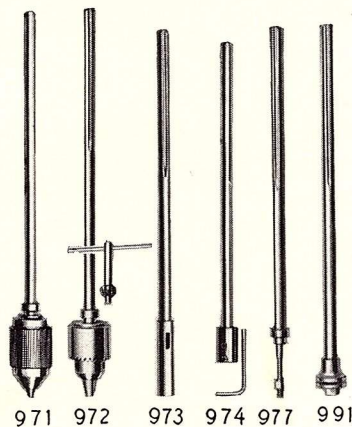
The 11,000 R.P.M. speed should be used only for occasional work due to the excessive wear on the bearings which are designed for 5000 R.P.M.

No. 1029 Multi-Speed attach. for 14" Slo-Speed drill presses including column casting, cone pulley and two belts, speeds of 185 R.P.M. to 1950 R.P.M. Code MULTK.

No. 271 Motor Belt for Multi-Speed. Wt. ½ lb. Code Word BELTQ
No. 272 High Speed Belt for Multi-Speed. Wt. ½ lb. Code Word BELTR
No. 273 Slo-Speed Belt for Multi-Speed. Wt. ½ lb. Code Wd. BELTS



No. 999
SHOWN WITH No. 1021
REAR BELT GUARD
AND MOTOR



No. 1011 Shown
with No. 1021
Belt Guard and
Motor.

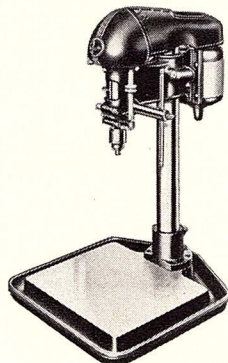
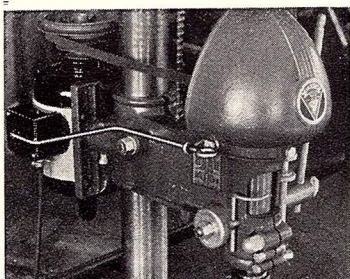


Photo at left shows how switch rod brings control of machine to finger tips of operator. This makes a very neat and simple method of motor control, without extra wiring and with minimum installation expense. There are no hanging loops of wire.



(FOR PRICES SEE ATTACHED PRICE LIST)

THE DELTA MANUFACTURING COMPANY • MILWAUKEE, WIS.

Multiple 14" Drill Presses Are All Economical Units for Production Work

The two and four-spindle 14" drill presses are used in many high-production shops, where they offer many outstanding advantages for drilling and tapping operations. They are economical in first cost as compared to larger multi-spindle machines for the same work. They are very economical in power consumption and in maintenance—in fact, there is practically no maintenance required.

They are identical in design and construction with the standard 14" single-spindle bench models described on the preceding pages, with the exception of the base and the mounting of the columns.

Specifications

45" high	20 1/4" x 51" table surface—4 spindle
4" spindle travel	Drills to center of 14" circle
25 1/2" chuck to table	Drilling capacity 1/2" in cast-iron
18 1/2" x 28" table surface—2 spindle	

Furnished with No. 1 Morse taper spindle or with 1/2" geared Jacobs chuck. Other spindles available as listed on page 12.

Spindle carried in New Departure "sealed-for-life" ball bearings, lubricated for life of bearings; no further lubrication necessary. Spindle pulleys of full "free floating" design; takes all belt pull so that none is transmitted to spindle, and automatically compensates for service mis-alignments. Double-splined spindles, with large radial spline faces for long wear and sensitive action. Interchangeable spindles. Graduated quills with adjustable depth pointers. Threaded stop rods with knurled nuts. Straight feed lever standard equipment. Heads counterbalanced for fast, easy adjustment.

14" MULTIPLE SPINDLE DRILL PRESSES

Cat. No.	No. of Spindles	Spindle Centers	Type of Spindle	Ship. Wt. in Lbs.	Code Word	Price
HIGH SPEED MODELS OF 680, 1250, 2400 and 4600 R. P. M.						
1540	2	12"	1/2" Jacobs	662	TWOSA	
1541	2	12"	No. 1 Morse	657	TWOSB	
1550	4	11 1/2"	1/2" Jacobs	1185	FOURE	
1551	4	11 1/2"	No. 1 Morse	1185	FOURF	
"SLO-SPEED" MODELS OF 470, 780, 1300 and 1950 R. P. M.						
1542	2	12"	1/2" Jacobs	667	TWOSC	
1543	2	12"	No. 1 Morse	662	TWOSD	
1552	4	11 1/2"	1/2" Jacobs	1185	FOURG	
1553	4	11 1/2"	No. 1 Morse	1185	FOURH	

All models include No. 1030 counterbalance assembly, No. 1399 cast iron legs and No. 985 motor pulley. High speed models include No. 387 belt. Slo-speed models include No. 430 belt.

Above listings do not include motors, shell, guards or switch parts.

Motors Recommended:

LIGHT DUTY:	60 310	1/3	H.P. Sp. Ph. AC. 110 V. 60 Cy.
	62 110	1/3	H.P. Cap. AC. 110/220 V. 60 Cy.
	66 110	1/3	H.P. 3 Ph. AC. 220/440 V. 50/60 Cy.
	68 110	1/3	H.P. DC. 115 V.
MEDIUM DUTY:	62 110	1/3	H.P. Cap. AC. 110/220 V. 60 Cy.
	66 320	1/2	H.P. 3 Ph. AC. 220/440 V. 50/60 Cy.
	68 110	1/3	H.P. DC. 115V.
	68 110	1/3	H.P. DC. 115V.
HEAVY DUTY:	66 320	1/2	H.P. 3 Ph. AC. 220/440 V. 50/60 Cy.
	68 110	1/3	H.P. DC. 115 V.

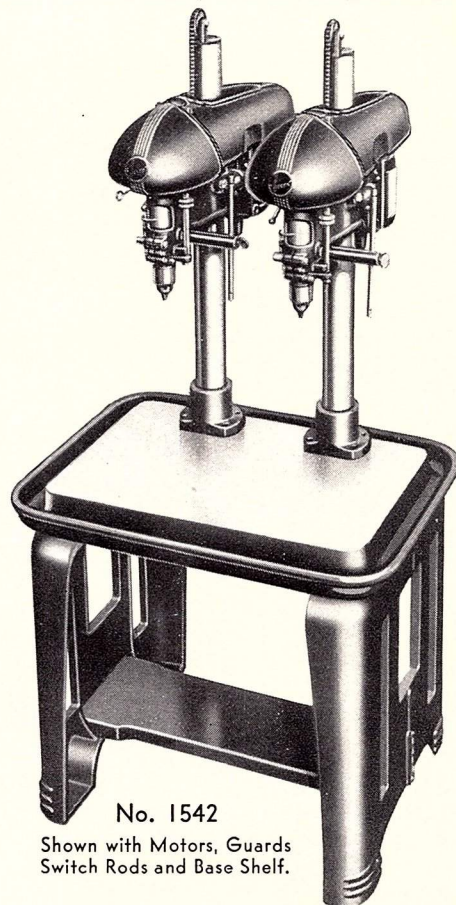
For 3 ph. motors use No. 1320 or No. 1329 3 ph. manual starters with No. 1322 mounting parts. Use No. 1331 switch rod for all single phase motors. See pages 53 to 55 for motors and switch parts.

Assembly Parts for 14" Drill Presses

Alert production executives and tool engineers have recognized the advantages of the 14" drill press and have used standard heads, columns and other parts to make their own special set-up. Since these units can be used in any position and since their cost is so low they are ideal for this purpose. The individual parts of the 14" drill presses are listed below.

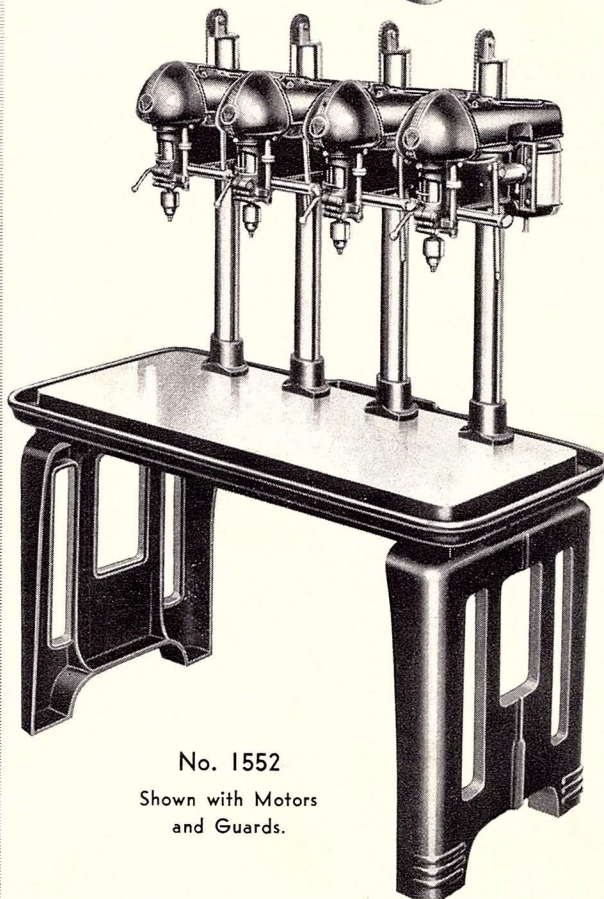
No. 970-B—High Speed 14" Head with 1/2" Geared Jacobs Chuck, 387 V-Belt and 985 Motor Pulley. 42 lbs. HEADH.....	
No. 1289-A—Slo-Speed 14" Head with 1/2" Jacobs Chuck, 430 V-Belt and 985 Motor Pulley. 59 lbs. HEADL.....	
No. 970-C—High Speed 14" Head with No. 1 Morse Taper Spindle, 387 V-Belt and 985 Motor Pulley. 42 lbs. HEADI.....	
No. 1286-A—Slo-Speed 14" Head with No. 1 Morse Taper Spindle, 430 V-Belt and 985 Motor Pulley. 59 lbs. HEADK.....	
No. 1010—Collar for 14" Drill Press Column. 2 lbs. NESCC.....	
No. 1019—Flange for Mounting 14" Column with Screws. 10 lbs. PRODE.....	
No. 1020—Column for 14" Drill Press 36 3/4 Inches Long. 13 lbs. PRODF.....	
No. 1517—Bench Table Only (No legs) for 2 Spindle 14" Drill Press. 215 lbs. DRIAW.....	
No. 1519—Bench Table Only (No legs) for 4 Spindle 14" Drill Press 500 lbs. DRIAY.....	
No. 387—V-Belt for 14" High Speed Drill Press. 1 lb. FORDP.....	
No. 430—V-Belt for 14" Slo-Speed Drill Presses. 1 lb. FORSL.....	
No. 985—Four-Step Motor Pulley 1/2" Bore. 2 1/2 lbs. NEWPU.....	
No. 1021—Belt Guard for 14" High Speed Drill Press. 13 lbs. PRODG.....	
No. 1022—Belt Guard for 14" Slo-Speed Drill Press. 17 lbs. PRODH.....	
No. 1030—Counterbalance Assembly for 14" Drill Presses, consisting of Spring, Chain, Column-Top Casting with ball-bearing roller and screws. 9 3/4 lbs. TWOSR.....	
No. 1290—Set of Parts for converting High-Speed 14" Drill Press into a Slo-Speed Model. 13 lbs. SLOPU.....	
No. 1399—Cast Iron Legs for Production Stand for All 14" and 17" Drill Presses, Without Lower Wood Shelf. Per Pair. 175 lbs. PRODK.....	

(FOR PRICES SEE ATTACHED PRICE LIST)



No. 1542

Shown with Motors, Guards
Switch Rods and Base Shelf.

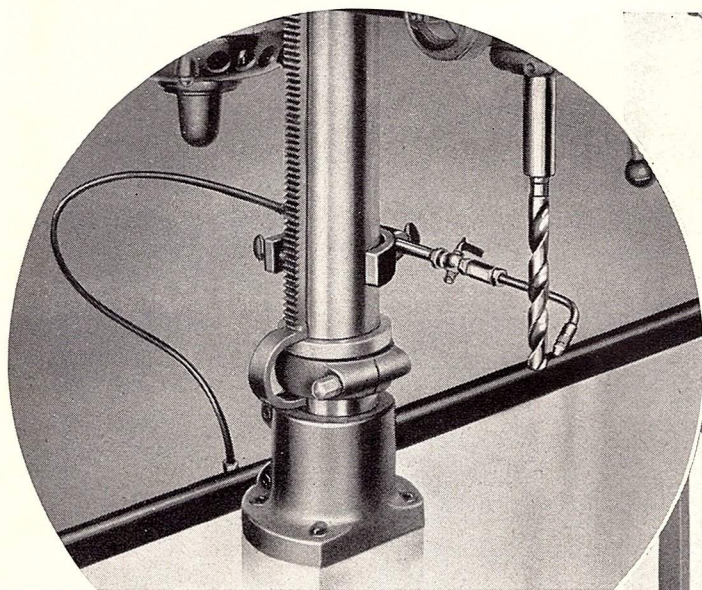


No. 1552

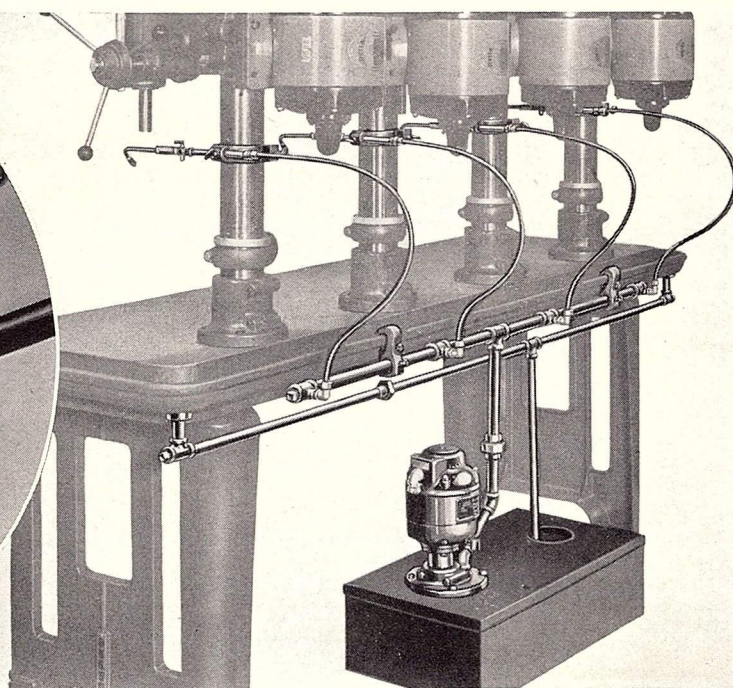
Shown with Motors
and Guards.

NEW

COOLANT EQUIPMENT FOR MULTI-SPINDLE DRILL PRESSES



Detail of nozzle. Note flexible clamp arrangement. Nozzle can be moved back and forward and rotated as desired. Is fully adjustable. Right—photo of complete installation. Note gusher type pump and tank. A neat efficient installation.



EMBODIES ALL FEATURES OF CONVENIENCE

This new coolant equipment for 14" and 17" Multi-Spindle Drill Presses overcomes all of the short-comings usually found in an attachment of this kind.

It puts the coolant just where it is wanted and at just the proper flow. It is fully adjustable. The clamp holding the nozzle may be moved up or down on the drill press which brings the nozzle to the point of the drill. By loosening a convenient thumb screw the clamp and nozzle may be entirely removed without a moments delay. It can be returned just as easily. The nozzle may be revolved so the flow of coolant hits the work at the proper angle. The jet cock permits just the proper flow and if desired may be closed entirely without affecting motor or pump.

The equipment consists of the flexible tubing, nozzle and c'amp brackets for drill press columns, all piping and fittings from nozzles to coolant pump and tank, with brackets for header pipe. Nozzle brackets attach to columns without removal of drill-press head, and pipe-header brackets clamp to oil trough rim without necessity for drilling or tapping. Piping, tubing, etc., is ready for installation, but shipped knocked down, as it is not practical to ship it assembled on the machine. Pump and tank can be supplied, but will be shipped from manufacturer's stock.

PUMP AND TANK

The pump furnished when required is a centrifugal type "gusher" pump, one model with capacity 15 gal. per minute at 5-ft. head or a model with 25 gal. per minute at 5-ft. head, with a 1725 R.P.M. motor. Prices on pumps will be quoted on request.

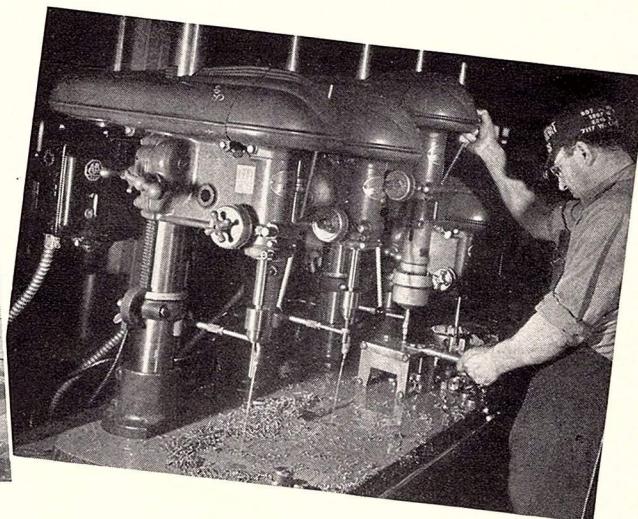
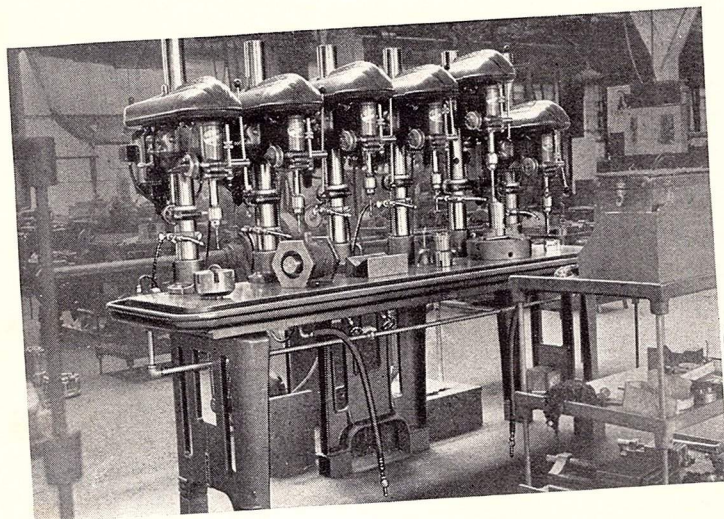
The pump is mounted integral with an 11 gal. tank, so that no piping is required from pump to tank. The pump can be supplied in the following voltages and frequencies only.

Frequencies Available					Frequencies Available				
Volts	Ph.	60	50	25	Volts	Ph.	60	50	25
110	1	60	50	25	400	3	—	50	—
220	1	60	50	25	440	3	60	50	25
380	1	—	50	—	550	3	60	50	25
400	1	—	50	—	220	2	60	50	—
440	1	60	50	—	220/440	2	60	—	—
220	3	60	50	25	440	2	60	50	—
220/440	3	60	50	—	550	2	60	50	—
220/380	3	—	50	—	115	D.C.	—	—	—
380	3	—	50	—	230	D.C.	—	—	—

When Ordering or Requesting Quotations—

Specify catalog number of drill press for which piping equipment, pump and tank are required. On a multi-spindle sectional table machine, give number of spindles. Specify current, phase, voltage, and frequency of pump motor.

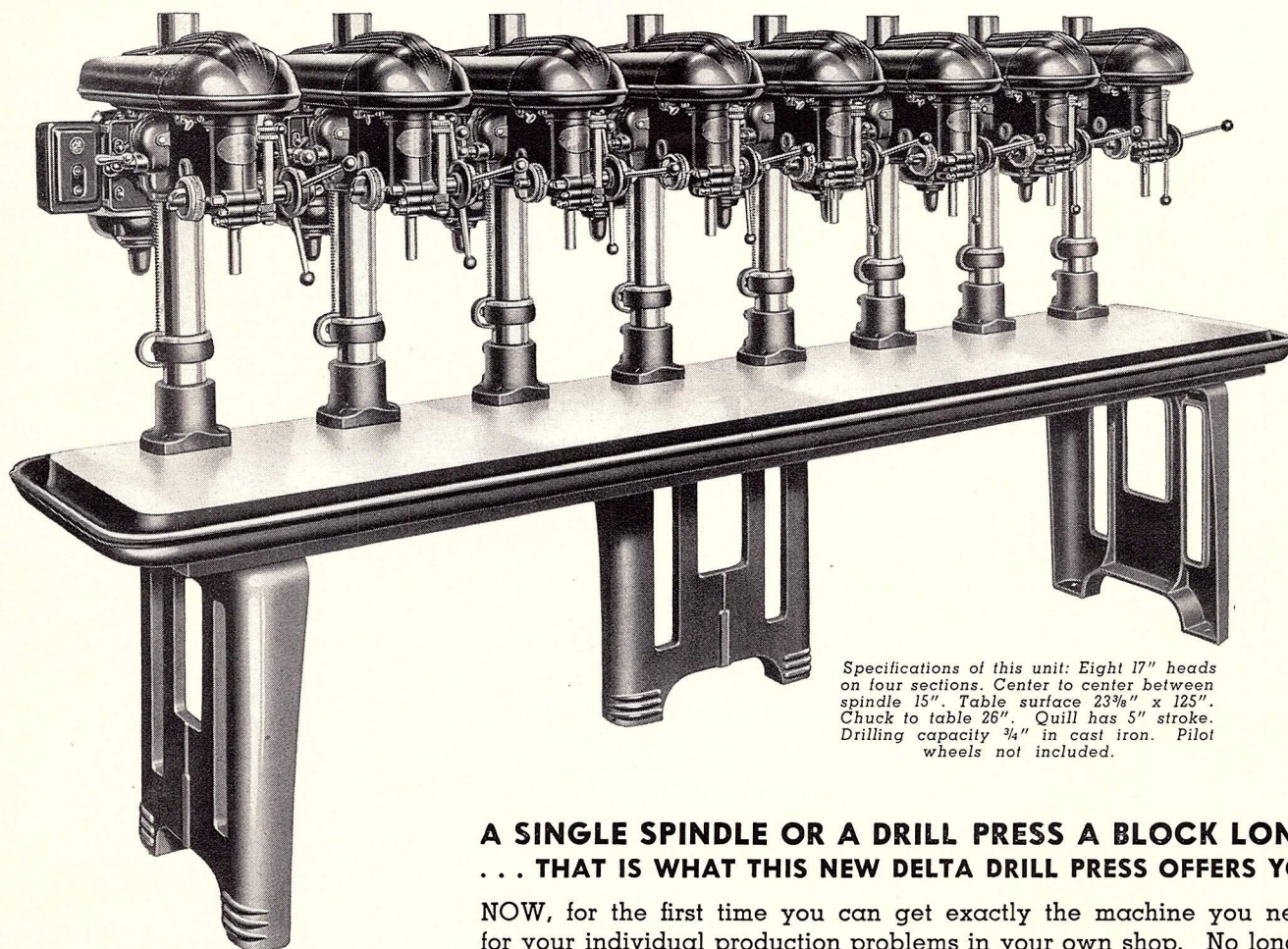
The illustrations show typical installations on multiple-spindle drill presses. It will be noted that this equipment provides a neat, workmanlike, efficient job, which can be installed with the minimum of effort, which will also save you time and trouble.



THE DELTA MANUFACTURING COMPANY • MILWAUKEE, WIS.

NEW

MULTIPLE SECTIONAL TABLE DRILL PRESS



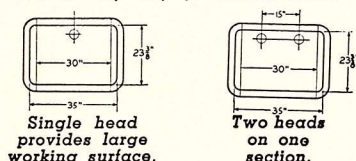
Specifications of this unit: Eight 17" heads on four sections. Center to center between spindle 15". Table surface 23 $\frac{3}{8}$ " x 125". Chuck to table 26". Quill has 5" stroke. Drilling capacity $\frac{3}{4}$ " in cast iron. Pilot wheels not included.

A SINGLE SPINDLE OR A DRILL PRESS A BLOCK LONG ... THAT IS WHAT THIS NEW DELTA DRILL PRESS OFFERS YOU

NOW, for the first time you can get exactly the machine you need for your individual production problems in your own shop. No longer need you take a "standard" machine with only a definite number of spindles. You can now get a drill press of one spindle, two, three, six or eight or any number you desire—you buy the machine to fit your jobs instead of making the jobs fit the machine.

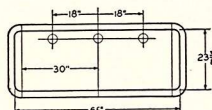
Typical

Set-ups showing various layouts and spacing. Different arrangements are also possible with the heads grouped in two's or three's or any way you need them.

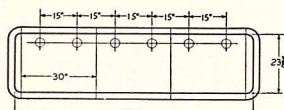


Single head provides large working surface.

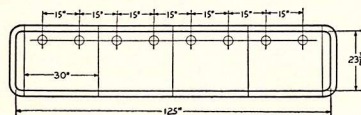
Two heads on one section.



Three heads on two sections.



Six heads on three sections.



Eight heads on four sections.

With this new low cost set-up you can have just the number of spindles you need—and you have them all in one row which speeds production since the piece being drilled or tapped can be started at one end of the machine and run to completion at the other end. This eliminates the costly transferring of materials from one drill press to another—handling, including trucking and inter-operation storage, are eliminated.

The drill press is built up on a section table—each table section being 23 $\frac{3}{8}$ " by 30" and with the addition of the end sections is increased to 35" long.

On these sections, any type of 17" or 14" head can be easily installed and at centers which meet your individual needs. This means that the maximum amount of flexibility is assured—you can have all 17" or 14" heads on one machine or a combination of both—you can have them spaced at any distance you desire—either close together or far apart. Because each machine tool is made individually for your applications, there are no so-called "standard" units, al-

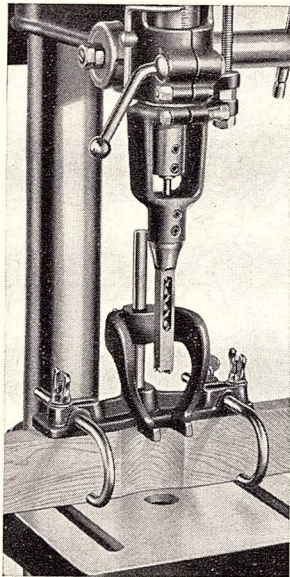
though we show below suggested set-ups of a single spindle, two spindle, three spindle, six spindle, and eight spindle machines — showing the working space available. These are the most popular combinations although, as stated before, other combinations are easily made up. Another outstanding feature of this new development is the low cost of the entire assembly. Heretofore, the price of a machine tool of this kind was almost prohibitive, but by means of our design and production, you can obtain this unit at an exceptionally low figure.

Tell us what your requirements are—how many drill press heads you could use in your set-up like this—whether you need 14" or 17" heads or a combination of both and what distance you want the heads spaced. We will gladly send you complete specifications and prices and any other information you desire.

- 1504 End section for sectional table drill press. 72 lbs. DRIAD ..
- 1505 Center section for sectional table drill press. 365 lbs. DRIAP....
- 1506 One only cast iron leg for sec. table drill press. 110 lbs. DRIAQ

(FOR PRICES SEE ATTACHED PRICE LIST)

THE DELTA MANUFACTURING COMPANY • MILWAUKEE, WIS.



Attachments Convert Drill Press Into Efficient Mortiser

Using this simple, easily installed attachment, the drill presses may be converted into accurate mortising machines and anyone, even without previous experience, can make straight, true square-end mortises in all kinds of wood and of practically any width in a fraction of the time necessary by hand methods.

Woodworkers of all kinds—cabinet makers, contractors, repair men, instructors in school shops—everyone who has to make mortise and tenon joints has found this economical tool to be a time and labor saver.

The mortiser consists of a heavy fence bolted to the drill press table. Two hook bolts hold the work against the fence and an adjustable hold-down keeps the work from being raised when the chisel is withdrawn. The chisel holder replaces the regular stop-rod clamp.

Hollow Chisels



Selected steel. Bit operates inside of chisel. Order proper bushing for each bit for 14" drill press. Outside of bushing, $\frac{1}{8}$ ". Shank of chisel, $\frac{5}{8}$ " x $1\frac{1}{2}$ ". Weight per set, $1\frac{1}{4}$ lbs.

Cat. No.	Size	Depth of Mortise	Code	Price Each
504	$\frac{1}{4}$ " x $\frac{1}{4}$ "	$1\frac{1}{8}$ "	CHISA	
505	$\frac{5}{16}$ " x $\frac{5}{16}$ "	$1\frac{1}{8}$ "	CHISB	
506	$\frac{3}{8}$ " x $\frac{3}{8}$ "	$2\frac{3}{4}$ "	CHISC	
508	$\frac{1}{2}$ " x $\frac{1}{2}$ "	$3\frac{1}{4}$ "	CHISE	

Bits



Cat. No.	Size	Dia. Shank	Code	Price
514	$\frac{1}{4}$ "	$\frac{3}{16}$ "	BITOA	
515	$\frac{5}{16}$ "	$\frac{1}{4}$ "	BITOB	
516	$\frac{3}{8}$ "	$\frac{1}{4}$ "	BITOC	
518	$\frac{1}{2}$ "	$\frac{5}{16}$ "	BITOE	

Bushings



Cat. No.	Size Hole	Code	Price Each
524	$\frac{3}{16}$ "	BUSHA	
525	$\frac{1}{4}$ "	BUSHB	
526	$\frac{5}{16}$ "	BUSHC	

No. 526 used with Nos. 516 and 518 bits.

For 11" and 14" Drill Presses

Capacity under hold-down, $\frac{3}{4}$ " thick. Capacity from ends of hooked rods to fence, $2\frac{3}{4}$ " thick. Must be used with No. 974 spindle on 14 inch and old No. 645 11 inch drill presses and No. 10 801 spindle for the No. 10 050 11 inch drill press.

No. 976 Mortising Attachment for 11" and 14" Drill Presses. Complete with Fence, Hold-Down Bracket, Hold-Down and Rod, Chisel Holder, Curved Arms and Bolts Without Spindle.....

Shipping Weight 7 lbs. Code Word NEMOR.

For 17" Drill Presses

Capacity under hold-down, $\frac{1}{2}$ " thick. Capacity from ends of hooked rods to fence, $2\frac{1}{2}$ " thick. Mortising bit is held in regular geared chuck. This mortising attachment cannot be used with drill presses with Morse taper spindle.

No. 1381 Mortising Attachment for 17" Drill Press. Complete with Base, Fence, Hold-Down, Curved Arm Bracket, Curved Arms, Chisel Holder and Bolts, without Bit or Chisel.....

Shipping Weight 15 lbs. Code Word DRILL.

Special Hollow Chisels

Not recommended for production work. Use bits and bushings described at left.

634 $\frac{1}{4}$ " x $\frac{1}{4}$ ". Depth $1\frac{1}{8}$ ". $\frac{1}{2}$ lb. HOLOA...

636 $\frac{3}{8}$ " x $\frac{3}{8}$ ". Depth $2\frac{3}{4}$ ". $\frac{1}{2}$ lb. HOLOC...

638 $\frac{1}{2}$ " x $\frac{1}{2}$ ". Depth $3\frac{1}{4}$ ". $\frac{1}{2}$ lb. HOLOD...

Tapping Attachments



THESE tapping attachments are constructed with the utmost precision and are very smooth and sensitive in operation. Ball bearings are used for accuracy, rigidity and long life. A balanced, heat-treated gear reversing mechanism distributes the pull among three gears, maintaining strain and wear at the minimum, and eliminating torsion. Attachment idles in "forward" position, thus reducing wear. The cone clutch engages with an extremely smooth action, and is protected so that no oil can reach its surface to interfere with the instant reaction to tapping pressure essential for precision.

For 14" Drill Presses

No. 990 Tapping Attachment to Fit 14" Drill Press with "Tru-Grip" Tap Holder. Capacity No. 2 to $\frac{1}{4}$ " in Brass and Cast Iron; No. 2 to $\frac{1}{8}$ " in steel. Complete with Wrench and Four Collets to Take No. 2, 3, 4, 5, 6, 7, 8, 9, 10 & $\frac{1}{4}$ " Taps Shipping Weight 6 lbs. Code Word NEWTA.

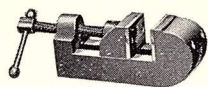
No. 996 Tapping Attachment to Fit 14" Drill Press with "Tru-Grip" Tap Holder. Capacity No. 8 to $\frac{1}{4}$ " in Brass; No. 8 to $\frac{3}{8}$ " in Cast Iron; No. 8 to $\frac{5}{16}$ " in Steel. With wrench and seven Collets to Fit No. 8, 9, 10, $\frac{1}{4}$ ", $\frac{5}{16}$ ", $\frac{3}{8}$ ", $\frac{7}{16}$ " & $\frac{1}{2}$ " Taps Shipping Weight, 10 Lbs. Code Word NEWTB.

For 17" Drill Presses

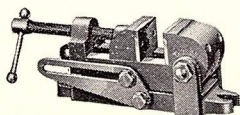
No. 1362 Tapping Attachment to Fit 17" Drill Press with No. 2 Morse Taper Spindle. With "Tru-Grip" Tap Holder. Capacity No. 8 to $\frac{1}{8}$ " in Steel; No. 8 to $\frac{3}{8}$ " in Cast Iron; No. 8 to $\frac{1}{2}$ " in Brass. With Wrench and Seven Collets to Fit No. 8, 9, 10, $\frac{1}{4}$ ", $\frac{5}{16}$ ", $\frac{3}{8}$ ", $\frac{7}{16}$ " and $\frac{1}{2}$ " Taps. Shipping Weight 7 Lbs. Code Word DRITA.

No. 1363 Tapping Attachment to Fit 17" Drill Press with No. 2 Morse Taper Spindle. With "Tru-Grip" Tap Holder. Capacity $\frac{1}{4}$ " to $\frac{5}{8}$ " in Brass and Cast Iron; $\frac{1}{4}$ " to $\frac{1}{2}$ " in Steel. With Collets to Fit $\frac{3}{8}$ ", $\frac{1}{2}$ ", $\frac{5}{8}$ " and $\frac{3}{4}$ " Taps. Collets Also Available to Fit $\frac{1}{4}$ ", $\frac{5}{16}$ ", $\frac{3}{8}$ ", $\frac{7}{16}$ ", $\frac{1}{2}$ " and $\frac{3}{4}$ " (Large Shank) Pipe Taps. Shipping Weight 10 Lbs. Code Word DRITB Reverse speed of tap is double forward speed.

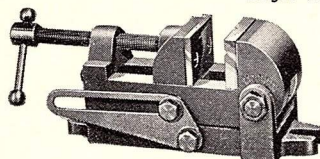
New DELTA VISES FOR PRODUCTION WORK



No. 1024
Drill Press
Vise



No. 1025
Angle Vise



No. 1026
Angle Vise

The latest additions to the line are these vises which essentially are a Drill Press, Milling Machine, Grinder and Bench Vise all in one. They can be used in the tool room—in the shop for bench and production work.

By merely raising the vise to the position desired it may be locked by tightening the clamp screws. The side of the vise is accurately graduated for angle work.

These vises are accurately machined. The base, body and sliding jaws are of semi-steel; casting-jaws of hardened steel. The clamping screw has a fine pitch thread and a long bearing in the vise body.

No.	Jaw Size	Open-ing	Lgth.	Ship. Wt. Lbs.	Code Word	Price
1024	$1\frac{1}{2}$ " x 1"	$1\frac{5}{8}$ "	$4\frac{5}{8}$ "	5	WISEA	
1025	$1\frac{1}{2}$ " x 1"	$1\frac{5}{8}$ "	$4\frac{5}{8}$ "	$6\frac{1}{2}$	WISEB	
1026	$2\frac{1}{2}$ " x $1\frac{1}{16}$ "	$2\frac{1}{2}$ "	$6\frac{1}{4}$ "	10	WISEC	

MACHINE SPUR BITS—10 OZ. EACH

No.	Size	Shank	Code	Price
804	$\frac{1}{4}$ "	$\frac{1}{8}$ "	SPURA	
805	$\frac{5}{16}$ "	$\frac{1}{8}$ "	SPURB	
806	$\frac{3}{8}$ "	$\frac{1}{8}$ "	SPURC	
807	$\frac{1}{2}$ "	$\frac{1}{8}$ "	SPURD	
808	$\frac{5}{8}$ "	$\frac{1}{8}$ "	SPURE	
809	$\frac{3}{4}$ "	$\frac{1}{8}$ "	SPURF	
810	$\frac{7}{8}$ "	$\frac{1}{8}$ "	SPURG	
812	$\frac{1}{2}$ "	$\frac{3}{8}$ "	SPURK	
818	Comp. Set		SPURL	

ROUTER BITS—4 OZ. EACH

No.	Size	Shank	Code	Price
474	$\frac{1}{4}$ "	$\frac{1}{2}$ " x $1\frac{1}{2}$ "	ROUTA	
475	$\frac{5}{16}$ "	$\frac{1}{2}$ " x $1\frac{1}{2}$ "	ROUTB	
476	$\frac{3}{8}$ "	$\frac{1}{2}$ " x $1\frac{1}{2}$ "	ROUTC	
477	$\frac{1}{2}$ "	$\frac{1}{2}$ " x $1\frac{1}{2}$ "	ROUTD	
478	$\frac{5}{8}$ "	$\frac{1}{2}$ " x $1\frac{1}{2}$ "	ROUTE	
480	Comp. Set		ROUTO	

DOWEL OR PLUG CUTTERS—6 OZ. EACH

No.	Size	Shank	Code	Price
814	$\frac{3}{8}$ "	$\frac{1}{2}$ " x 2"	PLUGA	
815	$\frac{1}{2}$ "	$\frac{1}{2}$ " x 2"	PLUGB	
816	$\frac{5}{8}$ "	$\frac{1}{2}$ " x 2"	PLUGC	
817	$\frac{3}{4}$ "	$\frac{1}{2}$ " x 2"	PLUGD	
819	$\frac{1}{2}$ "	$\frac{1}{2}$ " x 2"	PLUGE	
822	Comp. Set		PLUGS	

(FOR PRICES SEE ATTACHED PRICE LIST)

THE DELTA MANUFACTURING COMPANY • MILWAUKEE, WIS.

NEW

CUT-OFF MACHINE

For Cutting COPPER, ALUMINUM, BRASS

With

POLISHED SMOOTHNESS

No amount of description or explanation can possibly show you what we mean when we say this new machine cuts with "Polished Smoothness." Even the unretouched photo to the left cannot picture the smooth, almost unbelievable cut that this machine makes. A sample alone or an actual demonstration is the only positive way that you can learn what this new machine is capable of doing.

The success of this unit lies in the design of the high speed metal cutting blades used. In all — three blades have been developed which meet all of the requirements for the cutting of non-ferrous materials such as aluminum, copper and brass. An oiling device is also used which automatically lubricates the blade during the cut.

ELIMINATES EXPENSIVE FINISHING OPERATIONS

Because these blades do an amazingly fine job, cutting sharp and clean and leaving the cut with a polished-like surface, they eliminate the expense of additional polishing and burring operations.

THIS NEW MACHINE HAS MANY APPLICATIONS

There is practically no end to the applications of this new cut-off machine. New applications present themselves from day to day—it actually creates a job for itself, saving time and dollars in the plant where it is used.

HUSKY, LONG-LIFE ARBOR BEARINGS

The arbor has been given special attention. It is accurately ground and fitted with Zerk fittings for the occasional lubrication of the bearings which are sealed on the outside. The bearings themselves are mounted in diamond bored seats to insure perfect accuracy. The main arm casting includes both the arbor assembly and the pivot bearings so that perfect alignment is always maintained.

UNIVERSAL CLAMP AVAILABLE

The No. 1610 Universal clamp will hold securely all shapes and sizes of material. It is dual acting, rugged, positive and easily operated and does not interfere with loading and unloading of the machine.

HAS PERFECT GUARDING

The new cut-off machine has a heavy wheel guard, belt guard, as well as a chip guard so that maximum protection is assured the operator.

THE RIGHT BLADE FOR THE JOB

Blade No. 1626

This is the blade that is standard with the No. 1630 machine. It is a general purpose blade, cutting a wide range of brass, copper and aluminum sections. It should always be used where:

1. A wide variety of non-ferrous metals and plastics is to be cut in comparatively small lots on the same machine and without changing blades.
2. For steady production work on heavy brass, copper or aluminum sections.
3. For brass, aluminum or copper tubing with walls down to approximately 1/32" thick, or on hollow sections with walls of similar thickness.

(Note: The tooth shape of this saw is especially developed to cut heavy aluminum sections without loading, while at the same time the blade is free-cutting on brass and copper.)

Blade No. 1625

A thinner blade than No. 1626, with different tooth shape. For use:

1. On copper, brass and aluminum tubes and hollow sections with less than 1/32" wall thickness, and where minimum burr on such sections is desired.
2. On tubing and hollow sections up to 1/16" wall where material saving is a factor.

(Note: This blade is not suitable for heavy or solid sections. It is not a general-purpose blade.)

Blade No. 1624

For machineable plastics, such as Bakelite, Celeron and similar rod and tube stock made up of fabric or paper impregnated with synthetic resins.

Recommendations

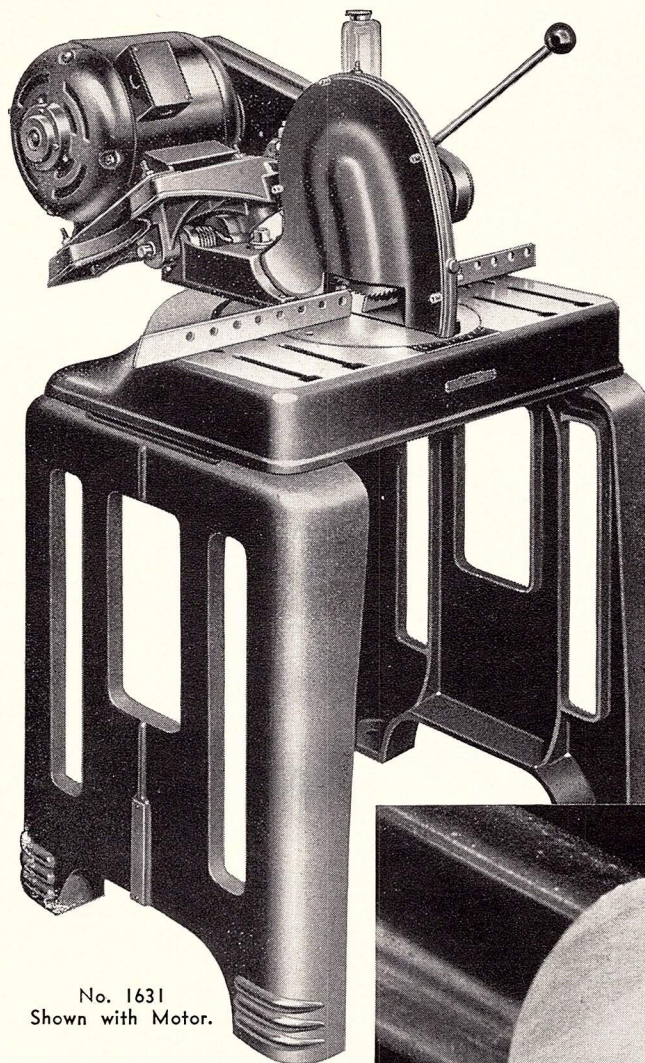
Here is a list of recommendations as to the type of material to be cut and the capacity of the machine on these materials:

SOLID SECTIONS

- Soft Brass —up to 1 1/2" diameter
- Half-Hard Brass —up to 1 1/4" diameter
- Aluminum —up to 1 1/2" diameter
- Alum. Extruded Sections up to equivalent of 2 sq. in.
- Copper—up to 1 1/2" diameter, or equivalent of 2 sq. in.
- Magnesium (Dow Metal)—up to 1 1/4" diameter
- Micarta and similar rods—up to 1 1/2" diameter.

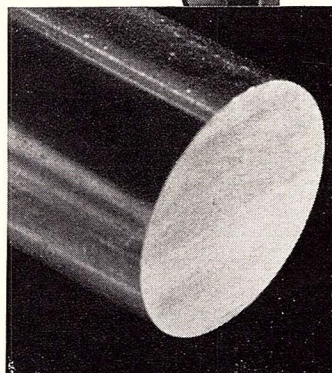
TUBULAR SECTIONS—Soft Brass, Hard Brass, Aluminum, Copper, Dow Metal, Micarta and similar Tubing up to 2" diameter.

Very hard non-ferrous metals, such as Duralumin, Tobin Bronze, Navy Bronze, etc., should not be cut with the saw blade. For this work the abrasive cut-off machine using abrasive discs as listed on page 18 is recommended.



No. 1631
Shown with Motor.

Actual size unretouched photo
of cut on brass bar stock. ➡



Cat. No.	Description	Price
1600	Bench Type Cut-Off Machine with Wheel Guard, Belt Guard, Chip Guard, Collars, and Fence with Stop. 235 lbs. CHOPA	.....
1626	General Purpose High Speed Steel Blade. 2 lbs. CHOPS	.....
1632	Oil and Flange. 3 lbs. CHOPY	.....
1399	Cast Iron Legs (Pair). 175 lbs. PRODK	.....
1610	Universal Clamp Fixture. 15 lbs. CHOPK	.....
289	V-Belt (3 Required \$1.00 each). 1/2 lb. BELTJ	.....
1634	3" Motor Pulley, 1" Bore for 3 H. P. Nema Motor. 3 lbs. CHOQA	.....
1631-C	Complete Non-Ferrous Cut-Off Machine Consisting of all of the above, without Motor or Switch. 550 lbs. CHOPL	.....
1631	Same as 1631-C but without Clamp, V-Belts, Motor Pulley, Motor or Switch. 530 lbs. CHOPX	.....
1630	Same as 1631 without Legs (Bench Type) 415 lbs. CHOPU	.....
1625	Thin Blade 2 lbs. CHOPR	.....
1624	Blade for Plastics, etc. 2 lbs. CHOPQ	.....
1608	Stationary Guard. 16 lbs. CHOPE	.....
1633	3" Motor Pulley, 3/4" Bore for 1 1/2 H.P. Motors. 3 lbs. CHOPZ	.....
1607	Fence with Adjustable Stop. 7 lbs. CHOPD	.....

MOTORS RECOMMENDED

LIGHT DUTY:	67 120 1 1/2 H.P. 3 Ph. A.C. 220/440 V. 50/60 Cy.
MED. and HEAVY DUTY:	67 320 3 H.P. 3 Ph. A.C. 220/440 V. 50/60 Cy.
	67 360 3 H.P. 3 Ph. A.C. 220/440 V. 25 Cy.
1320	3 Ph. Manual Starter for 1 1/2 H.P. Motors. 8 lbs. SWITC
1328	3 Ph. Manual Starter for 3 H.P. Motors. 8 lbs. SWITC
1329	Magnetic Starter for 1 1/2 H.P. or 3 H.P. motors. (Specify). 8 lbs. SWIDT

Use 1 1/2 H. P. Motors for cutting hollow sections of less than 1/8" wall. For all other work use 3 H. P. Motors. Spindle speed 2000 R.P.M. with 5,250 ft. per min. Blade 10" Dia.; 5/8" Arbor.

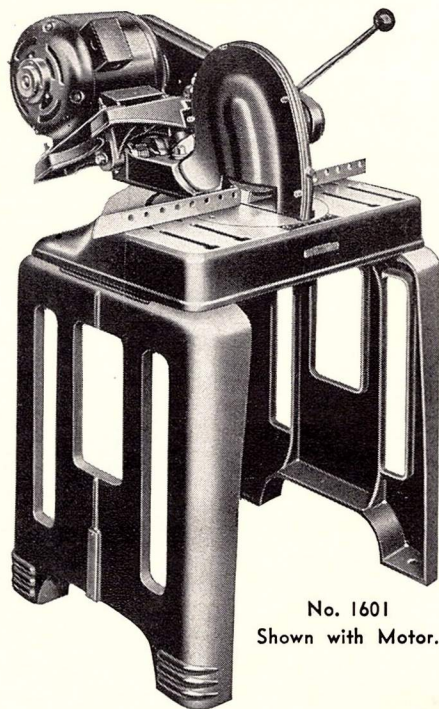
FEATURES

Cuts material at any angle—has powerful texrope drive—is perfectly guarded—has wide spaced pivot bearings.

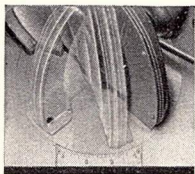
(FOR PRICES SEE ATTACHED PRICE LIST)

THE DELTA MANUFACTURING COMPANY • MILWAUKEE, WIS.

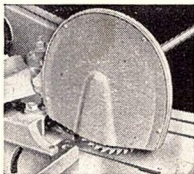
ABRASIVE CUT-OFF MACHINE IS SPEEDY AND ACCURATE



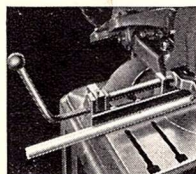
No. 1601
Shown with Motor.



Machine can be set at any angle for miter cuts. See large scale plate.



No. 1609 swing guard for wood cutting blade.



No. 1610 Universal clamp is positive, rugged, easily operated.

SPECIFICATIONS

Spindle Speed.....	4000 r.p.m.	Diameter of Arbor.....	5/8"
Feet per Minute.....	10,500	Wheel Collars 2 Sizes 3 1/2" and 5" diam.	
Diam. of Wheel or Saw.....	10"	Drive.....	3 V-Belt Texrope
		Size.....	30" wide, 35" deep, 47" high

Cat. No. Abrasive Cut-Off Machine Price

1600 Bench Type Cut-Off Machine with Wheel Guard, Belt Guard, Chip Guard, Collars, and Fence with Stop. 235 lbs. CHOPA

1399 Cast Iron Legs (Pair). 175 lbs. PRODK

1610 Universal Clamp Fixture. 15 lbs. CHOPK

294 V-Belt (3 Required at \$1.00 each). 1/2 lb. BELTH

1606 6" Motor Pulley, 1" Bore for 60 Cy., 3 H.P. Motor. 5 lbs. PULOT

1601-C Complete Abrasive Cut-Off Machine consisting of all of the above without Abrasive Wheel, Motor or Switch. 570 lbs. CHOPM

1601 Same as 1601-C but without Universal Clamp, V Belts, Motor Pulley, Abrasive Wheel, Motor or Switch. 410 lbs. CHOPB

1608 Stationary Guard for Abrasive Wheel. 16 lbs. CHOPE

1615 Abrasive Wheel for Soft and Hard Steel and Hard Brass; best general purpose wheel 3 1/2" x 10", 1/2 lb. CHOQC

1616 Abrasive Wheel, same as No. 1615, but only 1/8" thick, for use where less burr is permissible, 1/8" x 10", 1/2 lb. CHOQD

1617 Abrasive Wheel for all Steels and Hard Bronze where maximum life of wheel is required, and burr is permissible, 3/8" x 10", 1/2 lb. CHOQE

1619 Abrasive wheel for thin Steel Tubing and Molding, where little or no burr is permissible, 1/8" x 10", 1/2 lb. CHOQF

MOTORS RECOMMENDED:

FOR ABRASIVE MACHINE

LIGHT DUTY:

67 120 1 1/2 H.P. 3 Ph. A.C. 220/440 V. 50/60 Cy.

MEDIUM AND HEAVY DUTY

67 320 3 H.P. 3 Ph. A.C. 220/440 V. 50/60 Cy.

67 360 3 H.P. 3 Ph. A.C. 220/440 V. 25 Cy.

THIS ABRASIVE CUT-OFF MACHINE OFFERS MORE ACCURACY, CONVENIENCE, LONGER LIFE

This Abrasive Cut-Off Machine has an exceptionally wide range of application in shops and factories of all kinds where material must be cut to exact lengths.

This model can be supplied with either an abrasive wheel (of which there are several types for different materials) or a cross-cut blade may be used for sawing wood.

The Abrasive Cut-Off Machine incorporates the very best engineering design and construction, which insure accurate results—low maintenance and long life.

It is exceptionally sturdy throughout. The widely spaced Timken roller bearings, used in the pivot assembly, were chosen because of their accuracy, thus assuring perfect accuracy of blade travel.

The Arbor which travels at 4000 R.P.M. is accurately ground and fitted with Zerk fittings for the occasional lubrication of the bearings, which are sealed on the outside and mounted in diamond bored seats. Assembly is held in main arm casting, which also holds pivot bearings so that alignment is always perfect.

Full power is constantly transmitted by means of a 3-belt texrope drive. It is highly efficient and all vibration is eliminated and delivers the maximum amount of power. Pulleys are dynamically balanced and fully machined out of solid steel.

The new No. 1610 Clamp Fixture will clamp practically any material. It is easily operated, yet holds stock absolutely solid.

Capacity and Recommendations

HIGH SPEED STEEL. High speed steel bars and sections up to the equivalent of 3/4" solid round stock can be easily cut with an abrasive wheel.

COLD ROLLED STEEL. Cold Rolled steel bars and sections up to the equivalent of 3/4" can be accurately and quickly cut using an abrasive wheel.

STEEL TUBING. This material up to 1 1/4" in diameter up to a wall thickness of approximately 5/32" can be cut fast and clean using an abrasive wheel.

NON-FERROUS METALS. Aluminum, brass and copper sections up to the equivalent of 1 1/4" solid round stock are easily and perfectly cut on the Nos. 1630 and 1631 Non-Ferrous Cut-Off Machines listed on page 17. These two machines which use specially developed high speed steel blades do a remarkable job on this material, leaving the cut with a polished-like smoothness.

On the above materials the recommendations of the abrasive wheel manufacturer and the blade manufacturer should be closely followed to get the best possible cut.

WOOD. For wood up to 2" x 6" the No. 1620 machine with the No. 1018 cross-cut blade does a perfect job.

Woodworking Cut-Off Machine

1620 Bench Type Woodworking Cut-Off Machine with 1018

Cross-Cut Blade, 1609 Saw Guard, Belt Guard, Chip Guard

Collars and Fence with Stop. 240 lbs. CHOPW

1399 Cast Iron Legs (Pair). 175 lbs. PRODK

294 V-Belt (3 Required at \$1.00 each). 1/2 lb. BELTH

1605 6" Motor Pulley, 3/4" Bore for 60 Cy., 1 1/2 H.P. Motor, 5 lbs. PULOS

1610 Universal Clamp Fixture. 15 lbs. CHOPK

1621-C Complete Wood Working Cut-Off Machine Consisting of all of the above, without Motor or Switch. 570 lbs. CHOPN

1621 Same as 1621-C but without Universal Clamp, V-Belts, Motor Pulley, Motor or Switch. 415 lbs. CHOPV

1609 Swing Guard for Circular Saw Blade. 9 lbs. CHOPF

1018 10" Cross Cut Blade. 2 lbs. TENST

1627 High speed steel saw blade for cutting thin woodstrips. 2 1/8 lbs. CHOPT

MOTORS RECOMMENDED:

FOR WOODWORKING CUT-OFF MACHINE WITH No. 1018 BLADE LIGHT AND MEDIUM DUTY:

64 910 1 H.P. R.I. A.C. 110/220 V. 60 Cy.

66 920 1 H.P. 3 Ph. A.C. 220/440 V. 50/60 Cy.

68 910 1 H.P. D.C. 115 V.

HEAVY DUTY

67 120 1 1/2 H.P. 3 Ph. A.C. 220/440 V. 50/60 Cy.

Cat. No.	Description	Wt. Lbs.	Code Word	Price
----------	-------------	----------	-----------	-------

ACCESSORIES

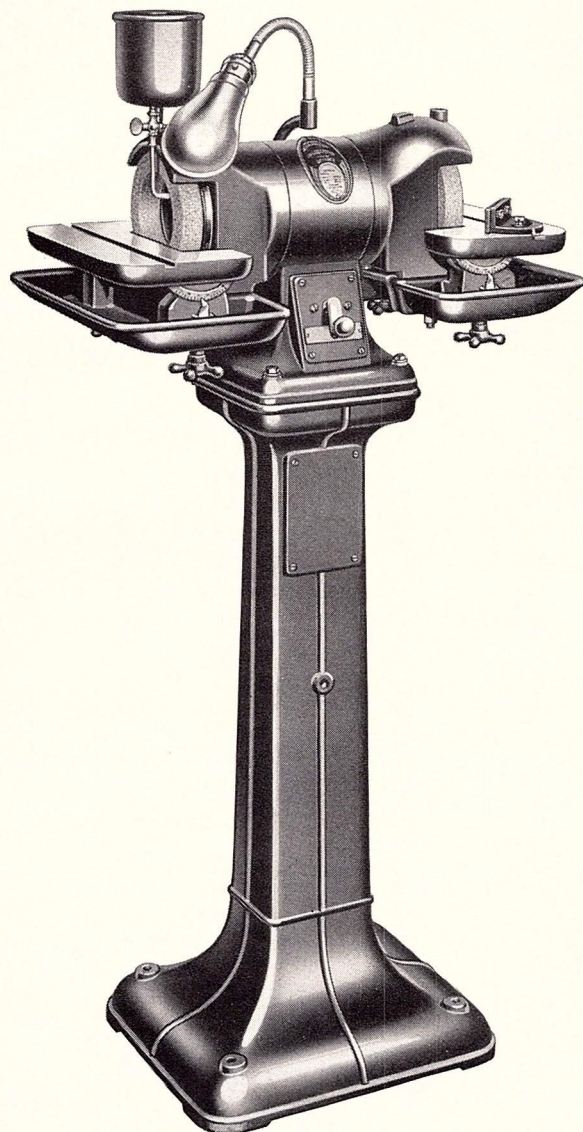
294	V-Belt for 6" Motor Pulley—3 Required...	1 1/2	BELTH	
501	V-Belt for 7" Motor Pulley—3 Required...	1 1/2	MORUV	
1603	7" Motor Pulley 3/4" Bore for 25 and 50 Cy. 1 1/2 H. P. Motors.....	9	PULOU	
1604	7" Motor Pulley 1" Bore for 25 and 50 Cy. 3 H. P. NEMA Motors.....	9	PULOV	
1605	6" Motor Pulley, 3/4" Bore for 60 Cy. 1 1/2 H. P. Motors.....	5	PULOS	
1606	6" Motor Pulley 1" Bore for 60 Cy. 3 H. P. NEMA Motors.....	5	PULOT	
1607	Fence with Adjustable Stop.....	7	CHOPD	
1320	3 Ph. Manual Starter for 1 1/2 H. P. Motors.	8	SWIPH	
1328	3 Ph. Manual Starter for 3 H. P. Motors...	6	SWITC	
1329	3 Ph. Magnetic Starter (Specify Motor)...	8	SWITD	

(FOR PRICES SEE ATTACHED PRICE SHEET)

THE DELTA MANUFACTURING COMPANY • MILWAUKEE, WIS.

NEW

NEW CARBIDE TOOL GRINDER



Because the use of tungsten-carbide tools is spreading so rapidly in the machine shops, this new carbide tool grinder has been developed which for accuracy, sturdiness, adaptability, general convenience and low cost cannot be duplicated by any other unit available.

It is another outstanding achievement—incorporating the best principles of design which insure accuracy and long life. Manufactured by modern precision methods in a modern plant, its cost is so low that it can be used in any shop, large or small. This grinder together with the regular tool grinders shown on the next page makes a perfect set up because on most carbide tools a coarse grit vitrified wheel is used for hogging down the shank steel of the tools which can be done on the regular grinder whereas the carbide grinder is used for sharpening the carbide tips of tools.

It is made in chiefly two styles—a bench and pedestal model with a wide range of motors as listed. The bench models may be easily converted into pedestal models by merely bolting them to the No. 1660 cast iron pedestal.

The motor with self-sealed ball bearings which require no lubrication for their entire life, is contained in the head and is of the reversing type because the rotation of the wheels must be down against the cutting edge. The reversing switch is built into the base and is convenient. Manual operated brakes on each wheel permit the grinder to be slowed down and stopped immediately for reversing.

Two 1"x6" steel backed silicon-carbide wheels with a 1" face, and a 1 1/4" hole, are furnished—one of 60 grit and one 120 grit. These are mounted directly onto the motor shaft. The speed is 3450 R.P.M. which gives a surface speed of the wheel of 5200 feet per minute. The grinder will take standard diamond wheels which we suggest should be obtained from your regular wheel source.

A heavy cast iron water pot with stop cock and copper tube is furnished for bringing water to the grinding surface on diamond wheels.

The heavy, accurately ground tables are 13 1/2" wide and 8" deep and tilt 30 degrees toward the wheel and 45 degrees away from the wheel as illustrated—accurate indicators and scale plates show the angle of the tables. The tables have a 1/2" x 3/8" groove for fixtures and jigs. A sliding gage with a tilting head is furnished standard with grinder.

The grinding of the carbide tool and the use of water results in a large amount of rusty sludge which collects in the water tray in the sub base. With other grinders this is difficult to remove. With this new grinder this is a simple procedure. By simply loosening two bolts the entire sub base can be removed from the grinder and the sludge scraped out and washed clean—thus you have a clean machine for accurate grinding at all times.

The adjustable light is another feature built into this grinder for your convenience. It swings from one side to the other but has a definite stop so that the wires cannot become twisted in the conduit. It provides light when you need it, where you need it, independent of general shop lighting.

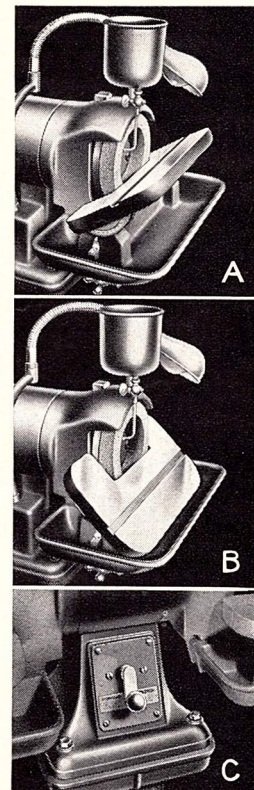
So well is this machine built—so accurate is the machining that it runs absolutely true and free from vibration so that accurate, delicate grinding can be done.

Compare this new carbide tool grinder with any on the market—study it point by point—compare its low price—its massive design and construction and you will find that this is one of the finest grinders available.

(A) This photo shows detail of table tilted 30 degrees towards the wheel. Note indicator and accurate scale plates below table which shows table angle. Note also convenient arrangement of water pot and copper tube so that water can be brought to the wheel just where it is needed.

(B) This shows detail of table tilted 45 degrees away from wheel. Note hand brake blocks protruding from top of wheel housing. Note also how light can be swung around to give perfect illumination for accurate grinding.

(C) This shows detail of reversing switch conveniently located at front of grinder. It is of the six pole type and completely wired into the unit. This switch opens both sides of line.



Cat. No.		Motor	Speed R.P.M.	Ship. Wt. Lbs.	Code Word	List Price
Bench Models	Pedestal Models					
SINGLE PHASE GRINDERS WITH 6 POLE SWITCH						
1650	.....	110 V. 60 C.	3450	125	GRIMB	
1651	.....	110 V. 50 C.	2850	125	GRIMC	
1652	.....	220 V. 60 C.	3450	125	GRIMD	
1653	.....	220 V. 50 C.	2850	125	GRIME	
.....	1670	110 V. 60 C.	3450	205	GRIMS	
.....	1671	110 V. 50 C.	2850	205	GRIMT	
.....	1672	220 V. 60 C.	3450	205	GRIMU	
.....	1673	220 V. 50 C.	2850	205	GRIMV	
THREE PHASE GRINDERS WITH 6 POLE SWITCH						
1656	.....	220/440 V. 50/60 C.	2850/ 3450	125	GRIMH	
	1676	220/440 V. 50/60 C.	2850/ 3450	205	GRIMY	
DIRECT CURRENT GRINDERS WITH 6 POLE SWITCH						
1654	.....	115 V. D.C.	3450	125	GRIMF	
1655	.....	230 V. D.C.	3450	125	GRIMG	
.....	1674	115 V. D.C.	3450	205	GRIMW	
.....	1675	230 V. D.C.	3450	205	GRIMX	

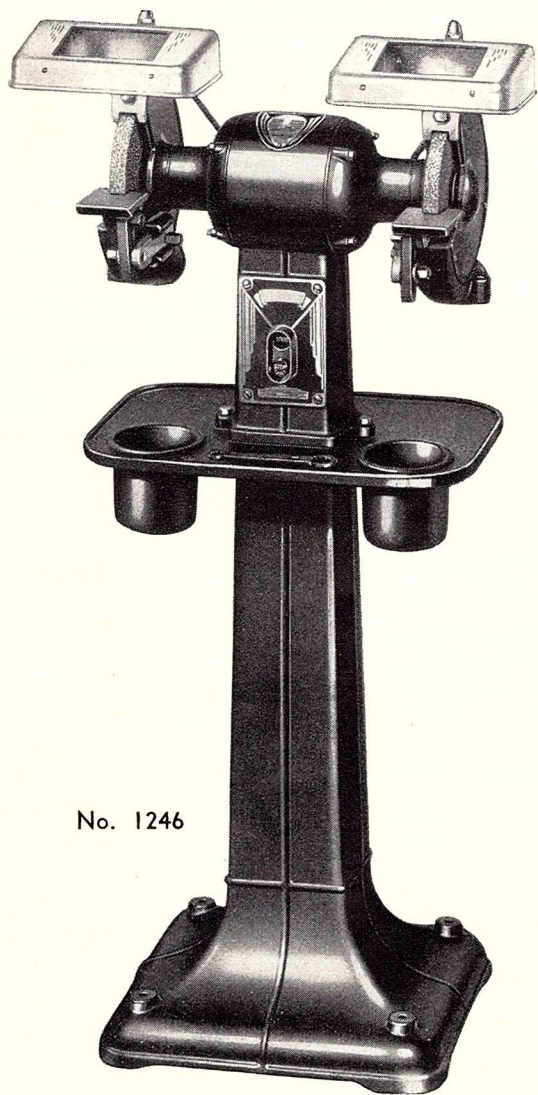
All models have 1 lamp attachment, 1 water pot and 2 wheels. When manual starter with overload protection is desired for 3 phase or D. C. motors, use No. 1320 manual starter, See page 53 to 55.

(FOR PRICES SEE ATTACHED PRICE LIST)

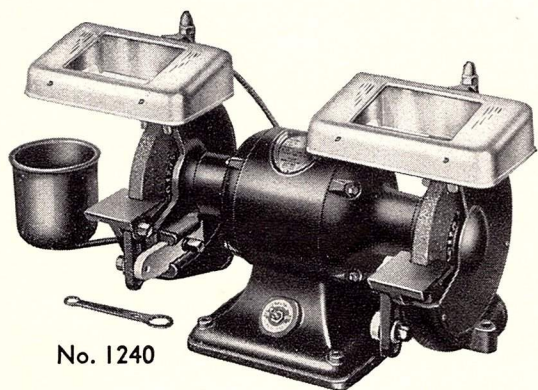
ACCESSORIES FOR CARBIDE TOOL GRINDER

Cat. No.	Description	Ship. Wt. Lbs.	Code Word	Price
1661	1"x6" Sil. Carb. Wh. 60 G., 1" Face 1 1/4" hole.	10	GRIML	
1662	1"x6" Sil. Carb. Wh. 120 G., 1" Face 1 1/4" hole.	10	GRIMM	
1663	One Water Pot with Faucet.....	5	GRIMN	
1664	Diamond Wheel Dresser Holder.....	1	GRIMO	

THE DELTA MANUFACTURING COMPANY • MILWAUKEE, WIS.



No. 1246



No. 1240

Delta Industrial Grinders "That Cannot Forget Their Goggles"

These perfected tool grinders are the most accurate, finest and safest grinders made—regardless of price!

From the double sealed-for-life ball bearings to the Twin-Lite Safety Shields these grinders offer the utmost in efficiency, convenience and safety and set new standards because they contain additional features not found in competitive makes.

The price belies the quality. The Twin-Lite Safety Shields flood both sides and face of the wheel making the grinder independent of the shop lighting system.

Fully MACHINED tool rests—efficient guards—wheels balanced to 1/100 inch ounce—these are only a few of the outstanding features of these remarkable grinders.

Size: Heavy, well proportioned, cast iron housing. Pedestal model has heavy base, 14½" by 15½"—tool tray 12" by 18"—two 4" water pots—tool rests are 39" from floor. Bench type has one 4" water pot.

Motor: Available with a wide variety of motors as listed opposite. For units with other motors, write for prices and specifications.

Wheels: Balanced to 1/100 inch ounce 60N and 46M Aluminous oxide wheels, ¾" face by 7" diameter, ¾" hole. Absolutely true and vibrationless to permit accurate tool grinding.

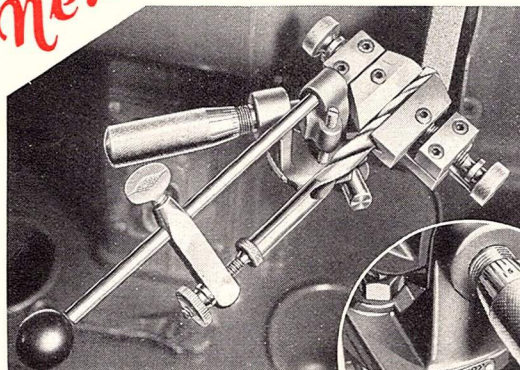
Tool Rests: Fully machined—not rough castings. Are fully adjustable vertically and horizontally—designed so that full advantage can be taken of sides of wheels. Easily detached.

Wheel Guards: Heavy cast iron with steel side plates. Designed to meet the strict regulations of the Wisconsin Industrial Commission. Only actual grinding section of wheel is exposed. Chute discharges dust to rear. Spark guard adjustable to wear of wheel.

Safety Shields: Patented Twin-Lite standard on all models. Double thickness shatter-proof glass. Included with each shield are two bayonet type lamps which flood both sides and face of wheels independent of shop lighting system. No glare in operator's eyes. Wired to motor switch so as to go on and off with motor operation.

Bearings: Precision double-seal New Departure ball bearings. No oiling required for entire life of bearing. No trouble due to entrance of abrasive dust.

new DRILL GRINDING ATTACHMENT



Left — No. 1296
Drill grinding attachment.

In circle — accurate scale for setting attachment to obtain the angle on the drill you need for your job.



Below—Wheel dresser holder for dressing wheel.

Sharpens Drills Accurately

This NEW drill grinding attachment which uses the face of the wheel—the natural way—is a precision built unit so accurately made—so easy and simple to operate that anyone can now do a perfect drill sharpening job. Micrometer settings insure evenly ground lips so that the drills run true. The amount of lip clearance on the drill is just right with enough of the heel cut away to provide enough clearance without weakening the cutting edge.

An additional feature of this new attachment is that you can adjust it so that you can grind the drill to fit your own job—with lip clearance and angles at any degree you need them. Capacity: ⅜" to ⅝" drills. Compared point by point with any other device of this kind, this new unit is by far the better unit.

No. 1296 Drill grinding attachment as illustrated with wheel dresser holder. Ship. wt. 10 lbs. Code GRIMJ.....

(FOR PRICES SEE ATTACHED PRICE LIST)

THE DELTA MANUFACTURING COMPANY • MILWAUKEE, WIS.

THE FINEST, SAFEST AND MOST ACCURATE GRINDERS MADE

CATALOG LISTING OF MOTOR DRIVEN GRINDERS AND BUFFERS

Cat. No.	Motor	Speed R.P.M.	Type of Switch	Safety Shields	Lamp Bulbs	Wheel Guards	Wheels	Ship. Wt. Lbs.	Code Word	List Price
BENCH TYPE MOTOR DRIVEN GRINDERS										
1240	110 V., 60 Cy., Single Phase...	3450	Toggle	2	4	2	2	95	GRINA	
1252	110 V., 60 Cy., Single Phase...	3450	Toggle	None	None	2	2	95	GRINI	
1271	220 V., 60 Cy., Single Phase...	3450	Toggle	2	4	2	2	95	BENDC	
1272	110 V., 50 Cy., Single Phase...	2850	Toggle	2	4	2	2	95	GRIFA	
1277	220 V., 50 Cy., Single Phase...	2850	Toggle	2	4	2	2	95	GRIFE	
1244	220 V., 50/60 Cy., 3 Phase....	2850/3450	None	2	4	2	2	95	GRINF	
1256	220 V., 50/60 Cy., 3 Phase....	2850/3450	None	None	None	2	2	95	GRINN	
1287	440 V., 50/60 Cy., 3 Phase....	2850/3450	None	2	4	2	2	95	GRINW	
1304	115 V., D. C.....	3450	Toggle	2	4	2	2	95	GRIFJ	
1307	230 V., D. C.....	3450	Toggle	2	4	2	2	95	GRIFM	
PEDESTAL TYPE MOTOR DRIVEN GRINDERS										
1242	110 V., 60 Cy., Single Phase...	3450	Toggle	2	4	2	2	170	GRINC	
1254	110 V., 60 Cy., Single Phase...	3450	Toggle	None	None	2	2	170	GRINL	
1273	220 V., 60 Cy., Single Phase...	3450	Toggle	2	4	2	2	170	GRIFI	
1274	110 V., 50 Cy., Single Phase...	2850	Toggle	2	4	2	2	170	GRIFB	
1278	220 V., 50 Cy., Single Phase...	2850	Toggle	2	4	2	2	170	GRIFF	
1246	220 V., 50/60 Cy., 3 Phase....	2850/3450	Relay	2	4	2	2	170	GRING	
1258	220 V., 50/60 Cy., 3 Phase....	2850/3450	Relay	None	None	2	2	170	GRINO	
1285	440 V., 50/60 Cy., 3 Phase....	2850/3450	Relay	2	4	2	2	170	GRINV	
1305	115 V., D. C.....	3450	Toggle	2	4	2	2	170	GRIFK	
1308	230 V., D. C.....	3450	Toggle	2	4	2	2	170	GRIFO	

Specifications and prices of grinders with other speeds sent upon request.

MOTOR DRIVEN BUFFING MACHINES

No. 1283 Bench Type, 110 V., 60 Cy., Single Phase, 3450 R.P.M. with Toggle Switch. Without Safety Shields, Lamp Bulbs, Wheels or Wheel Guards. Ship. Wt. 80 Lbs. Code Word GRIBS..

3450 R.P.M. = 6500 Ft. per Minute — 2850 R.P.M. = 5370 Ft. per Minute. For units with Other Motors and Switches Write for Specifications and Prices.

No. 1284 Pedestal Type 110 V., 60 Cy., Single Phase, 3450 R. P. M. with Toggle Switch, without Safety Shields, Lamp Bulbs, Wheels or Wheel Guards. Ship. Wt. 155 Lbs. Code Word GRITB

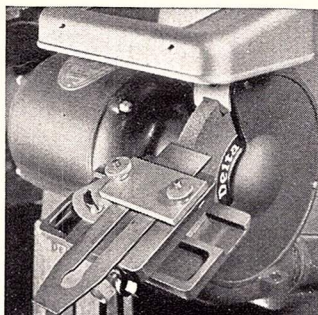
new PLANE BIT GRINDING ATTACHMENT
Here is a new Plane Bit Grinding attachment that has all of the best features of existing designs yet has additional advantages that increase its usefulness in the shop. The carriage table is readily clamped to the adjustable arm on the grinder. The table tilts so that the desired angle is obtained. This table is fully machined and on it rides the plane bit holder and clamp.

The plane bit is clamped as shown—an adjustable quadrant is located on the left side which permits the accurate grinding of angle knives as well as assuring an accurate right angle position for straight knives.

The knurled nut below gives hair-like adjustment for the amount of the "cut" when grinding. The entire carriage and clamp may be lifted off the table thus providing a convenient and accurate table for other grinding without the necessity of replacing the regular tool rest.

Distance between clamp screws is $3\frac{3}{8}$ " affording ample space for wide knives as well as scrapers. Diamond Pointed Wheel Dresser No. 3121 may be clamped into holder alongside the angle quadrant for wheel dressing.

No. 1294—Plane Bit Grinding attachment as illustrated .. Ship. Wt. 6 lbs. Code Word GRIMA



ACCESSORIES

Cat. No.	Description	Wt. Lbs.	Code Word	Price
1245	$\frac{3}{4}$ " x 7" Aluminous Oxide Wheel, 60 Grit, Grade N, $\frac{5}{8}$ " Hole.....	2	GRINJ	
1247	$\frac{3}{4}$ " x 7" Aluminous Oxide Wheel, 46 Grit, Grade M, $\frac{5}{8}$ " Hole.....	2	GRINK	
1267	$\frac{5}{8}$ " x 7" Vit. Al. Oxide Wheel, 46 Grit, $\frac{5}{8}$ " Hole.....	2	GRISL	
1250	Twin-Lite Shield (One Only) No Bulbs.....	3	GRILT	
1280	One Lamp Bulb for Twin-Lite Shield.....	$\frac{1}{2}$	GRILB	
1236	Fine-knotted Wire Brush $\frac{5}{8}$ " Hole, 6" Dia.....	1	WIRRA	
1237	Medium-knotted Wire Brush $\frac{5}{8}$ " Hole, 6" Dia.....	1	WIRRC	
1238	Coarse-knotted Wire Brush $\frac{5}{8}$ " Hole, 6" Dia.....	1	WIRRE	

DIAMOND POINTED WHEEL DRESSER



An efficient and inexpensive tool for dressing all types of general grinding wheels. The diamond is securely held—the tool is sturdy, $9\frac{1}{4}$ " long and has a comfortable handle.

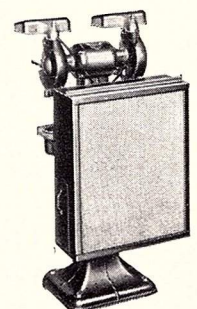
No. 3121 Dressing Tool. Ship. Wt. 1 Lb., Code Word GRIAO.....

Dust Collector for Grinder

This practical and efficient dust collector is self-contained and need not be connected to the shop blower system. No additional power is required. Grinder is completely portable. Efficient filters virtually trap all of the fine dust.

No. 1292 Dust Collector unit for pedestal grinder with filter, brackets, screws Ship. Wt. 40 lbs., Code Word DUSTO.

No. 1293 Replaceable filter for above Ship. Wt. 10 lbs. Code Word DUSTY.



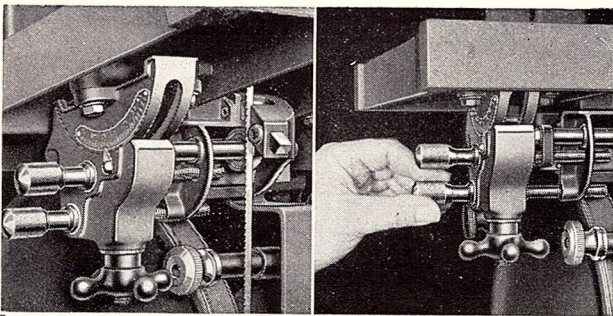
(FOR PRICES SEE ATTACHED PRICE LIST)

THE DELTA MANUFACTURING COMPANY • MILWAUKEE, WIS.

14" Metal Cutting Band Saw

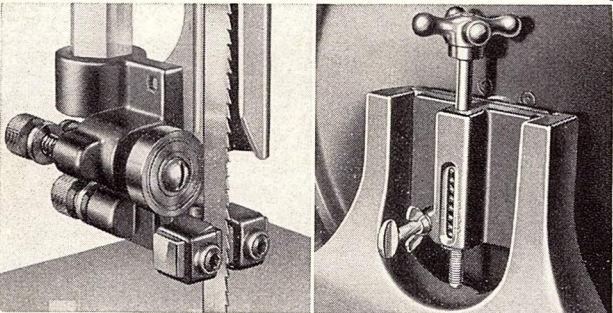
Ideal For Cutting:

Aluminum castings and sheets	Babbitt
Hard and Soft cast brass	Bakelite and other types of molded plastic
Brass sheets and tubing	Asbestos
Cast iron	Brake linings
Copper	Fibre
Cold rolled steel	Canvas and metallic hose
Carbon tool steel	Mica
Bronze and manganese	Hard rubber
Drill rod	Slate
High speed steel	Transite
Monel metal	Pipe
Nickel steel	Countless other materials
Iron sheets and bars	
Malleable iron	



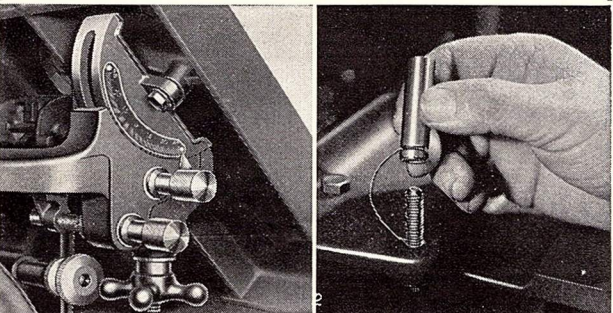
Showing massive and accurate construction of the lower guide control and front table trunnion (Patent Pending)

Lower guide control adjustment brought to front of table so that operator's hands need not come near blade.



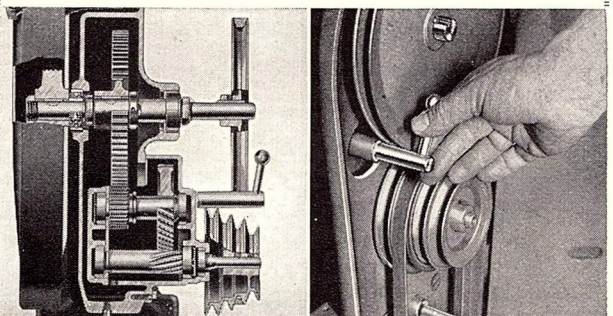
Micrometer adjustments of guides insure proper blade support for accurate work yet allow blade to run free.

Upper wheel has adjustment for regulating blade tension. Index shows correct tension for various width of blades.



Two solid, widely spaced trunnions give maximum table rigidity, insure better clamping and insure accuracy.

Adjustable leveling stop pin allows table to be accurately returned to level. Can be removed for a 10 degree left tilt.



Gear drive is simple, foolproof and substantial and with self-sealed ball bearings is engineered for long life.

A flip of a lever changes saw from slow-speed metal working to high speed woodworking.

THERE is no limit to the number of jobs you can find for this economical low-cost tool around the general tool and machine shop. And the few uses mentioned above scratch only the surface of the machine's adaptability. Die casters find it indispensable for trimming work, as do molders of plastics.

It cuts extruded shapes square, beveled or at any angle for store-front work, and cannot be equaled for fitting light structural shapes. The miter-gage groove in the table makes it easy to fit the machine with fixtures for cutting tubing, etc., on a production basis, and it can be fitted with rip gage for cutting strips from sheet metal. The ornamental bronze and iron shop can find dozens of uses for it—once the machine is installed, there is no end to the number of jobs that are found for it!

Users are enthusiastic about its economy, versatility, low power consumption and low upkeep cost.

Ideal for Pattern Shop

THE four metal-cutting speeds and standard 2200 feet per minute speed for wood make this an ideal machine for the pattern shop as well as the foundry. For metal pattern work the standard low speeds are used. To change over for wood work requires only a throw of a lever, a change of a belt and the installation of a wood-cutting blade—the work of a few minutes.

Specifications

SIZE: Height, without stand, 41 $\frac{1}{4}$ "; with stand, 65 $\frac{3}{4}$ "; Width, 16 $\frac{1}{4}$ "; front to back, 24 $\frac{3}{4}$ ".

SPEEDS: With 1725 r.p.m. motor 125, 175, 250 and 340 ft. per min. With 1140 r.p.m. motor 80, 114, 160 and 220 feet per min. One 2200 ft. per min. speed for wood with 1725 R.P.M. motor.

CAPACITY: Blade to frame 14". Capacity under guide 6"; with height attachment 12 $\frac{1}{4}$ ".

BASE: Heavy hollow-cast base, designed to enclose rear of lower wheel completely. Back designed for easy cleaning. Oil reservoir for gear lubrication, with cup for easy filling.

GEAR UNIT: Gear unit self-contained. Spiral drive pinion and intermediate gear, final drive spur gear and pinion. Shafts carried on self-sealed New Departure ball bearings, requiring no lubrication. Back gear engaged or disengaged by half-turn of lever. A flip of a lever changes it from a slow-speed metal saw to a high-speed wood saw. Gear drive is simple, foolproof and substantial, and with its helical drive gears and self-sealed ball bearings, is engineered for long trouble-free service.

UPPER ARM: Hollow-cast upper arm provides great stiffness and strength. Removable from base to permit use of height block of height attachment, which increases capacity of machine to 12 $\frac{1}{4}$ " under the guide.

TABLE: Massive table, 14" x 14", swinging smoothly on double trunnions (patented). Makes very rigid table mounting, and permits removal of blade without disturbing rip-gage bars. Table tilts 45 degrees to right and 10 degrees to left with positive stops. $\frac{3}{8}$ " x $\frac{3}{4}$ " groove for miter gage.

(FOR PRICES SEE ATTACHED PRICE LIST)

THE DELTA MANUFACTURING COMPANY • MILWAUKEE, WIS.

Safe — Convenient — Reliable

WHEELS: Heavy cast iron safety type wheels rimmed to make the renewal easy; no cement required. Carried on New Departure double-seal ball bearings. No lubrication required for entire life of bearing. Wheels are practically frictionless, which means minimum power consumption and permanent alignment.

Upper wheel completely enclosed, having rear guard as well as removable front guard, complying with school and industrial requirements.

Lower wheel completely guarded front and rear; mounted on ball bearings sealed on both sides and lubricated for the entire life of the bearing.

Removable, non-rattling wheel guards completely enclose wheels and make blade changing easy and fast.

BLADE TENSION: Quick index on upper-wheel tension adjustment, to indicate correct tension for various widths of blades.

GUIDES: Finest type of guide ever offered. Each adjustment independent of others, and each made with micrometer accuracy. Guide pins can be set to blade teeth without disturbing the setting of the blade support, and blade support can be set without altering adjustment of guide pins. High-grade reversible double-seal ball-bearing blade supports.

Lower guide of same construction as upper one, with added safety feature that all controls are brought out to front of table as shown in the photo at left, so that operator's hands never come near blade—an important safety feature (patent applied for). Guide comes within $\frac{1}{4}$ " of table top.

LAMP ATTACHMENT: Light attachment available (extra) which permits machine to be used wherever most convenient for the job in hand and assures plenty of light on the work.

BEARINGS: All wheels and shafts in this new machine are carried on New Departure self sealed ball bearings. The use of ten of these bearings—pioneered by us in this field—insures trouble-free performance for the entire life of the bearings. Lubricant is sealed in and dust is sealed out; since neither improper lubricant nor grit can enter the bearings, their life is increased three or four times over old-style bearings.

The use of these high-grade bearings extends to the blade supports, which are double-sealed ball bearings also. These may be reversed to provide a new bearing surface after a long period of use.

CATALOG LISTING OF 14" METAL CUTTING BAND SAW

Cat. No.	Price
880 14" Metal Cutting Band Saw with Wheel Guards, 8" Arbor Pulley for Wood, 4-Step Pulley for Metal and One No. 1062 Metal Cutting Blade, 175 lbs. LABMA	
891 Steel Stand, Top: 7 $\frac{1}{2}$ x 15 $\frac{1}{2}$ ", 24" High. 31 lbs. LABST	
882 Lamp Attachment. 1 $\frac{1}{2}$ lbs. LAMPA	
883 Belt Guard, (See Page 22). 41 lbs. LABAB	
387 V-Belt (Metal Drive). 1 lb. FORDP	
568 V-Belt (Wood Drive). 1 lb. FORVD	
718 4-Step Motor Pulley. 1 $\frac{1}{2}$ lbs. CONPA	
881-C Complete Metal Cutting Band Saw consisting of all of the above, without Motor or Switch. 250 lbs. LABMF	
881 Same as 881-C but without Lamp Attachment, Belt Guard, Motor or Switch. 206 lbs. LABMB	
887-C Same as 881-C but with 886 Cast Iron Stand in place of 891 Steel Stand. 440 lbs. LABMG	
887 Same as 887-C but without Lamp Attachment, Belt Guard, Motor or Switch. 400 lbs. LABMD	
861 Rubber Tire for Wheel, 1 only. 1 lb. TIREF	
886 Cast Iron Stand, 24" High. 100 lbs. LABMC	
889 Table Insert, Steel. $\frac{1}{2}$ lb. LABIN	

MOTORS RECOMMENDED:

LIGHT DUTY

No. 62 110 $\frac{1}{2}$ H.P. Cap. A.C. 110/220 V. 60 Cy.
No. 68 110 $\frac{1}{2}$ H.P. D.C. 115 V.

MEDIUM DUTY

No. 66 320 $\frac{1}{2}$ H.P. 3 Ph. A.C. 220/440 V. 50/60 Cy.
No. 68 110 $\frac{1}{2}$ H.P. D.C. 115 V.
No. 64 510 $\frac{1}{2}$ H.P. R.I. A.C. 110/220 V. 60 Cy.

HEAVY DUTY

No. 64 510 $\frac{1}{2}$ H.P. R.I. A.C. 110/220 V. 60 Cy.
No. 66 720 $\frac{3}{4}$ H.P. 3 Ph. A.C. 220/440 V. 50/60 Cy.
No. 68 510 $\frac{1}{2}$ H.P. D.C. 115 V.

The slowest rate of travel of the saw blade using a 1725 R.P.M. motor is 120 feet per minute.

Use No. 1320 Manual or No. 1329 Magnetic 3 Phase Starter for 3 Phase Motors. This Starter can be bolted direct to the No. 886 cast iron stand but when the No. 891 steel stand is used No. 1322 mounting parts must also be used.

With Single Phase Motors the No. 132 switch box can be mounted direct to the No. 886 cast iron stand, but when the No. 891 steel stand is used the No. 1334 switch rod is recommended.

See Pages 53-55 for Motors and Switch Parts.

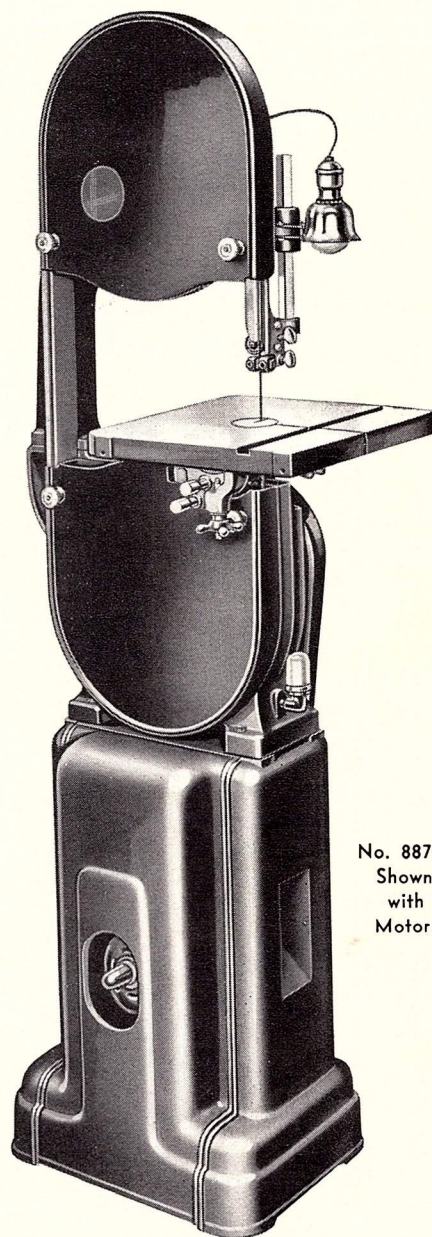
METAL CUTTING BAND SAW BLADES. 93 Inches Long

Made of High Grade Electric Furnace Steel, Accurately Set, Spaced and Jointed, These Blades Will Stand Up Under Hard Work. These are Hard-Edge Blades for Cutting All Metals.

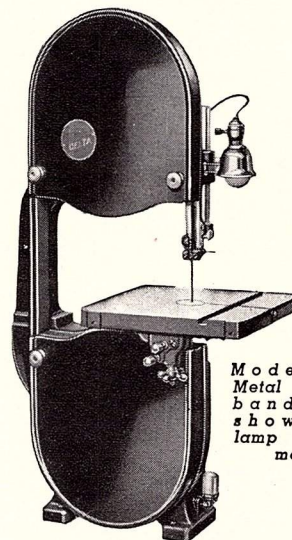
Cat. No.	Width	Teeth Per Inch	Ship. Wt. Lbs.	Code Word	Price
1060	$\frac{1}{2}$ "	14	1	BLMET	
1062	$\frac{3}{8}$ "	18	1	BLMEU	
1064	$\frac{1}{2}$ "	24	1	BLMEX	

(FOR PRICES SEE ATTACHED PRICE LIST)

THE DELTA MANUFACTURING COMPANY • MILWAUKEE, WIS.

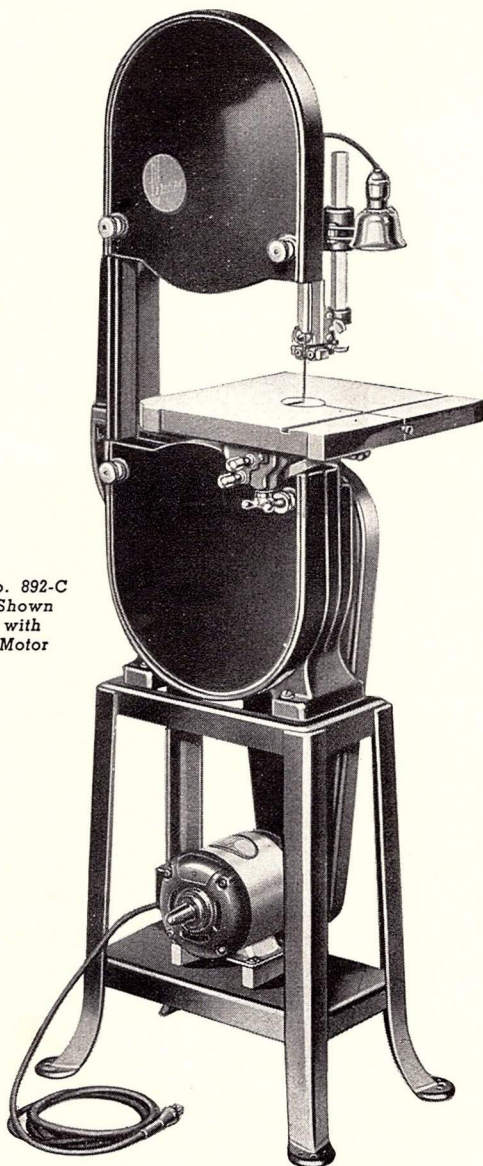


No. 887-C
Shown
with
Motor.



Model 880
Metal cutting
band saw
shown with
lamp attachment.

No. 892-C
Shown
with
Motor



14" Wood Cutting Band Saw

DESIGNED and built with the same fine care and incorporating all of the outstanding features of the band saws described on the two preceding pages, this wood cutting band saw is used in hundreds of production shops. It of course does not have the back-geared mechanism for reducing the speed but the construction of the wheels, blade supports and guides, its sealed-for-life ball bearings, husky smoothly swinging table and other features are the same as the metal cutting unit.

This saw offers every advantage found in larger machines plus a decided saving in first cost, in maintenance cost and in power cost. For safety, accuracy, dependability and convenience you cannot obtain a better saw.

Cat. No.

Price

890	14" Wood Cutting Band Saw with Wheel Guards, 8" Arbor Pulley, One 1034 1/4" Wood Cutting Blade. 155 lbs. LABAN.....	
891	Steel Stand, Top: 7 7/8" x 15 7/8", 24" High. 31 lbs. LABST.....	
882	Complete Lamp Attachment. 1 1/2 lbs. LAMPA.....	
883	Belt Guard. 41 lbs. LABAB.....	
568	V-Belt. 1 lb. FORVD.....	
5275	2 3/4" Motor Pulley, Specify 3/4" Bore. 3/4 lb. PULOD.....	
892-C	Complete Wood Cutting Band Saw consisting of all of the above without Motor or Switch. 225 lbs. LABUO.....	
892	Same as 892-C but without Lamp Attachment, Belt Guard, Motor or Switch. 186 lbs. LABUN.....	
888-C	Complete Unit Same as 892-C but with 886 Cast Iron Stand in Place of 891 Steel Stand. 295 lbs. LABUP.....	
888	Same as 888-C but without Lamp Attachment, Belt Guard, Motor or Switch. 252 lbs. LABME.....	
861	Rubber Tire for Wheel, 1 only. 1 lb. TIREF.....	
886	Cast Iron Stand, 24" High. 100 lbs. LABMC.....	
889	Steel Table Insert. 3/4 lb. LABIN.....	

MOTORS RECOMMENDED:

LIGHT DUTY

60 310 1/3 H.P. Sp. Ph. A.C. 110 V. 60 Cy.

MEDIUM DUTY

62 110 1/3 H.P. Cap. A.C. 110/220 V. 60 Cy.

66 320 1/2 H.P. 3 Ph. A.C. 220/440 V. 50/60 Cy.

68 110 1/3 H.P. D.C. 115 V.

HEAVY DUTY

66 320 1/2 H.P. 3 Ph. A.C. 220/440 V. 50/60 Cy.

64 510 1/2 H.P. R.I. A.C. 110/220 V. 60 Cy.

68 510 1/2 H.P. D.C. 115 V.

Use No. 1320 or No. 1329 3 phase manual starter for 3 phase motors. These starters can be bolted direct to the No. 886 cast iron stand but when the No. 891 steel stand is used No. 1322 mounting parts must also be used.

With single phase motors the No. 132 switch box can be mounted direct to the No. 886 cast iron stand, but when the No. 891 steel stand is used the No. 1334 switch rod is recommended.

See pages 53 to 55 for motors and switch parts.

Band Saw Blades for 14" Band Saws

93 INCHES LONG

Cat. No.	Width	Cut Radius	Code	Price Each
1032	1/8"	1/4"	BLABA	
1033	1/8"	1/4"	BLABB	
1034	1/8"	3/4"	BLABC	
1036	3/8"	1"	BLABD	
1038	1/2"	1 1/4"	BLABE	
1040	3/4"	1 3/4"	BLABF	

Shipping Weight 15 oz. Each.

*105 INCHES LONG

Cat. No.	Width	Cut Radius	Code	Price Each
1045	1/8"	1/4"	BLABJ	
1046	1/8"	1/4"	BLABK	
1047	1/8"	3/4"	BLABL	
1048	3/8"	1"	BLABM	
1050	1/2"	1 1/4"	BLABO	
1052	3/4"	1 3/4"	BLABP	

Shipping Weight 18 oz. Each.

*Used with No. 894 Height Attachment.

Height Attachment Increases Capacity of Saw

This simple attachment increases the capacity of the 14" band saw from 6" under the guide to 12 1/4". Can be added any time—105 inch blades are used.

No. 894 Height Attachment on all 14" Band Saws, with Cast Block, Dowels, Bolt, Extension Front Blade Guard and Wood Back Blade Guard.....
Ship. Wt. 14 Lbs. Code Word—LABHA.

Guard Completely Encloses Belt on 14" Saw

Made of heavy cast iron—hinged for access to belt—fastened with screws. Fits No. 881, 887, 892 and 888 units.

No. 883 Belt Guard for Band-Saw Units, Ship. Wt. 41 Lbs. Code Word—LABAB

Rip Gage Fits All 14" Band Saws

Ripping on band saw easily and accurately done with this gage.

No. 893 Rip-Gage with 18" Guide Bars. Ship. Wt. 11 Lbs. Code Word—LABGA.
No. 895 Rip-Gage with 32" Guide Bars. Ship. Wt. 12 Lbs. Code Word—LABGB

Band Saw Blades

		78" Long for 12" Saw		66" Long for No. 785 Saw		74" Long for No. 768 Saw	
Width	Rad.	No.	Code	No.	Code	No.	Code
1/8"	1/4"	532	BABLA	732	BABLK	770	BANDC
3/8"	1/2"	533	BABLB	733	BABLL	771	BANDE
1/4"	3/4"	534	BABLC	734	BABLM	772	BANDG
3/8"	1"	536	BABLE	736	BABLP	773	BANDH
1/4"	3/4"	*381	BAMET	*781	BAMEU	*774	BANDI

*For cutting soft metals.

(FOR PRICES SEE ATTACHED PRICE LIST)

THE DELTA MANUFACTURING COMPANY • MILWAUKEE, WIS.

Abrasive Belt Finishing Machine

Abrasive Finishing

HERE is a 6" belt-type abrasive finishing machine that is heavy and husky enough to do any of the dozens of sanding, polishing and finishing operations to be found around the average shop—and yet is portable enough to be used just where it is wanted.

Adapted for Many Industrial Finishing Operations

Many machine and manufacturing shops use this machine for polishing and sizing metal parts. Die-casters, also, use it as a finishing and polishing machine, with a great saving in power cost over larger machines. For finishing, fining and surfacing plastic parts, also, it has found wide acceptance. Adaptable for practically any small industrial finishing operation.

Used Vertically or Horizontally

This machine may be set horizontally, as shown at right below, and equipped with a wood fence for edge or face sanding, if required. Or it may be used vertically, in connection with the 7½" x 14¾" tilting table as shown at top of page, for a wide variety of operations in both wood and metal.

Specifications

Completely ball-bearing equipped. Double-seal bearings, lubricated at the factory for life. Completely enclosed and guarded in accordance with all safety requirements. Exceptionally heavy main drive shaft, carrying large diameter drum (5½"). Large driving pulley to transmit power. No rubber covering required on drums, thus eliminating one source of replacement expense. Adjustable deflector on drum hood catches practically all sawdust. Hood is provided with suction spout. Machine operates vertically as well as horizontally. Cloth-backed belts, 6" wide by 48-5/16" long. Aluminum-oxide belts for metal finishing. Tilting table 7½" by 14¾", with ¾" by ¾" groove for miter gage, is available for use in vertical position. Adjustable fence for edge sanding and adjustable back stop for flat sanding are available for use in horizontal position. Welded steel stand available to make machine completely portable. Belt Guard available to complete guarding of machine.

Cat. No.

Price

- 1400** Abrasive Belt Finishing Machine only with One No. 1412 Garnet Belt, without Fence, Backstop, Table, Stand, Motor, Belt or Motor Pulley. 90 lbs. SANDA.....
- 1401** Tilting Table. 17 lbs. SANDB.....
- 1403** Backstop Complete with Bracket. 4 lbs. SANDD.....
- 1410** Wood Fence (3¼" x 17½") with Brackets. 7 lbs. SANDL.....
- 864** Miter Gage (See Page 46) 4½ lbs. NECMI.....
- 1406** Steel Stand, Top: 7½" x 15½"—29¼" High. 34 lbs. SANST....
- 1411** Belt Guard with Screws. 41 lbs. SANDM.....
- 560** V-Belt, 56 ⅝" Ins. Cir. 1 lb. EICVB.....
- 5500** 5" Motor Pulley, ¾" Bore. 1½ lbs. PULOH.....
- 1402-C** Complete Unit consisting of all of the above but without Motor, Switch or Switch Rod. 194 lbs. SANDW.....
- 1402** Same as 1402-C but without Fence, Backstop, Table, Miter Gage, Belt Guard, Motor, or Switch Rod. 124 lbs. SANDC.....
- 1420** Dust Collector with Mounting Adapter for 1400 Abrasive Belt Finishing Machine with Cloth Bag, 110 V., A.C. or D.C. Motor with Built-In Switch, Cord and Plug. 11 lbs. SANDV.....
- 1412** 6" Garnet Belt for Wood, 80 Grit, Fine. 1 lb. SANDN.....
- 1413** 6" Garnet Belt, 40 Grit, Coarse. 1 lb. SANDO.....
- 1414** 6" Al. Oxide Belt for Metal, 100 Grit, Fine. 1 lb. SANDP.....
- 1415** 6" Al. Oxide Belt for Metal, 50 Grit, Coarse. 1 lb. SANDQ....

MOTORS RECOMMENDED:

LIGHT DUTY

- 64 510 ½ H.P. R.I. A.C. 110/220 V. 60 Cy.
66 520 ½ H.P. 3 Ph. A.C. 220/440 V. 50/60 Cy.
68 510 ½ H.P. D.C. 115 V.

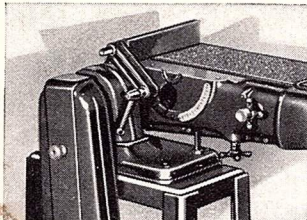
MEDIUM DUTY

- 64 710 ¾ H.P. R.I. A.C. 110/220 V. 60 Cy.
66 720 ¾ H.P. 3 Ph. A.C. 220/440 V. 50/60 Cy.
68 710 ¾ H.P. D.C. 115 V.

HEAVY DUTY

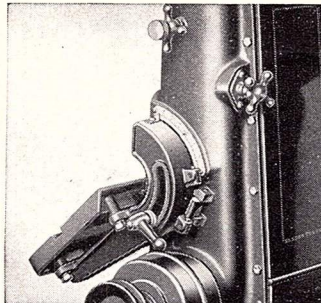
- 64 910 1 H.P. R.I. A.C. 110/220 V. 60 Cy.
66 920 1 H.P. 3 Ph. A.C. 220/440 V. 50/60 Cy.
68 910 1 H.P. D.C. 115 V.

Use No. 1320 or No. 1329 3 Ph. Manual Starter and 1322 Mounting Parts.
Use No. 1334 Switch Rod for Single Phase Motors.
See Pages 53 to 55 for Motors and Switches.



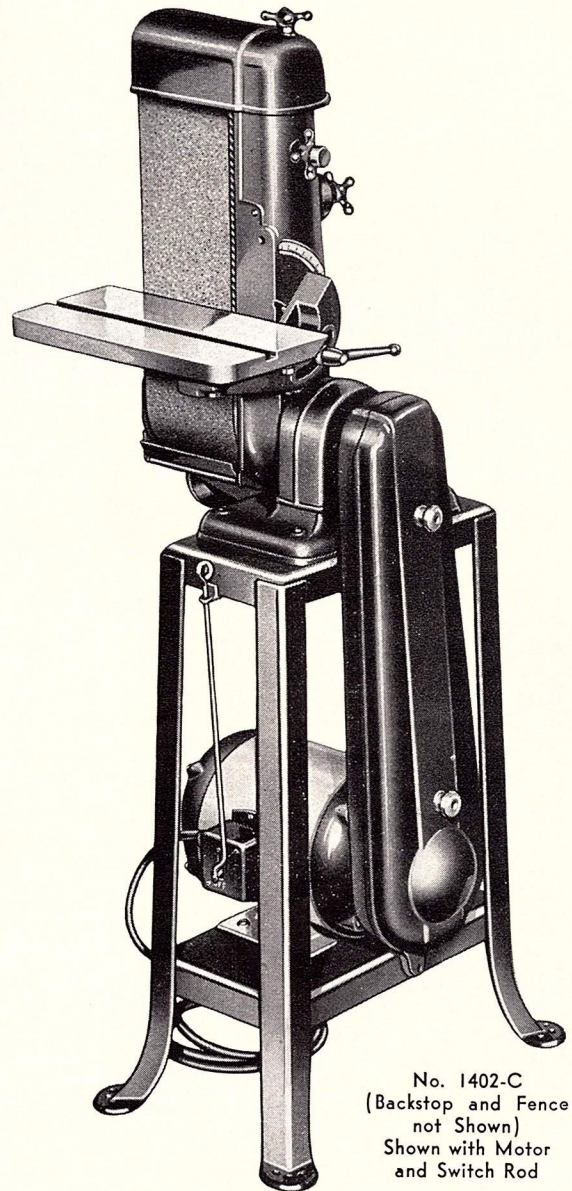
Above. View from rear, showing adjustable back stop and its bracket. This is available for use in sanding flat work, to prevent it from being carried along with the belt.

Right. A close-up view of the heavy trunnion that carries the

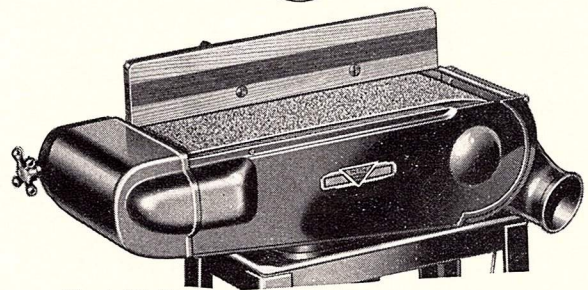


tilting table, showing the swinging stop link and adjustable stop screws. A tilting scale and adjustable pointer are also provided.

(FOR PRICES SEE ATTACHED PRICE LIST)

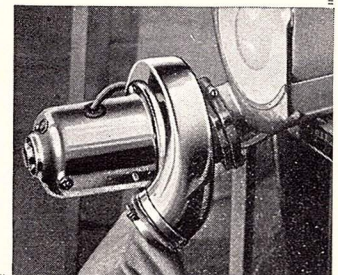


No. 1402-C
(Backstop and Fence
not Shown)
Shown with Motor
and Switch Rod



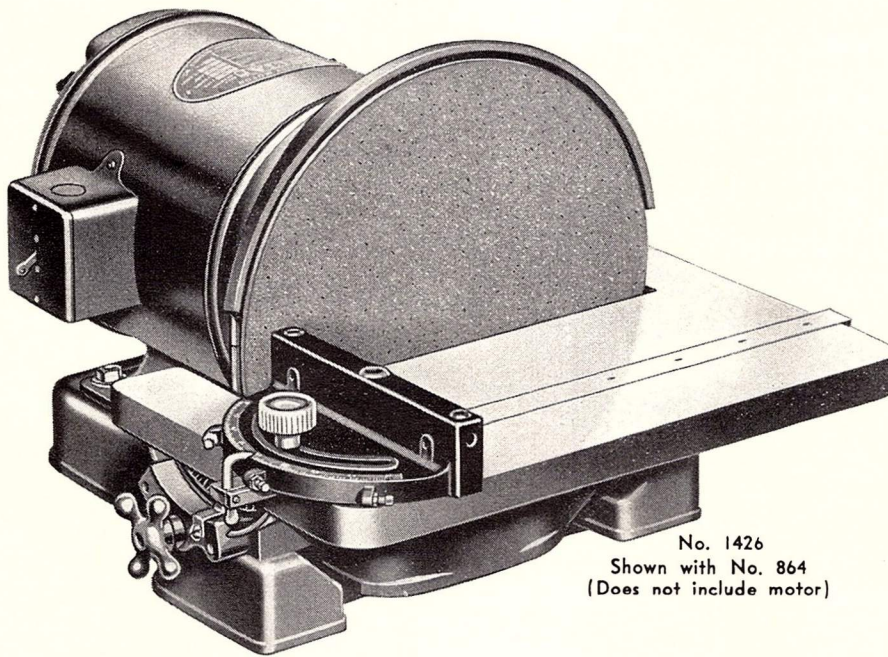
No. 1400 Shown
with No. 1410 Fence

No. 1420 Dust Collector (right) is of special value to the production and school shop because actual test show that 90% of the sawdust made is drawn into the cloth bag. Universal type motor for 110 V. A. C. or D. C.

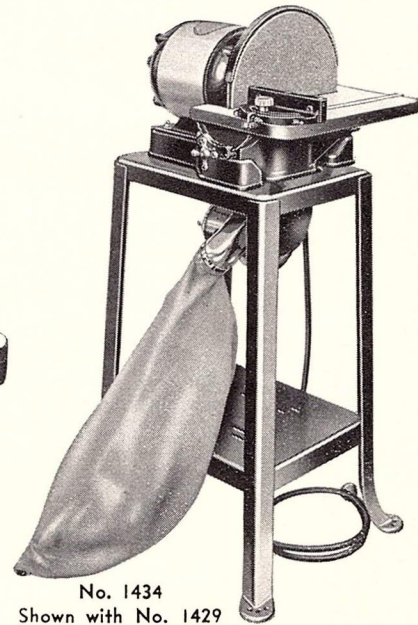


THE DELTA MANUFACTURING COMPANY • MILWAUKEE, WIS.

ABRASIVE DISK FINISHING MACHINE — A HIGH GRADE UNIT



No. 1426
Shown with No. 864
(Does not include motor)



No. 1434
Shown with No. 1429
and No. 864

For FINISHING . . . MITERING . . . SQUARING . . . GRINDING . . .

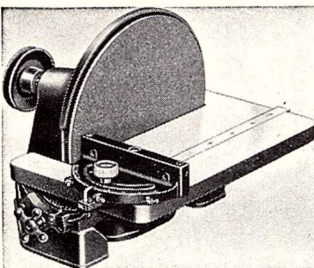
DESIGNED to meet every requirement for accurate finishing, this abrasive disk finishing machine is a high-grade machine tool for equally high-grade work. From its completely machined, true-running 12" disk to its large surface table and its husky spindle, carried on self-sealed ball bearings, it is designed for long life, low power consumption and accurate, dependable results.

The direct-motor-drive model can be used with any of our standard 1/2 H. P. ball bearing motors in 8 1/2" frames. The disk in this model fits directly onto the end of the motor shaft, and makes the unit completely self-contained. The belt-drive model makes it possible to use any available motor; to use motors built for odd voltages or frequencies, or to vary the speed to suit the job.

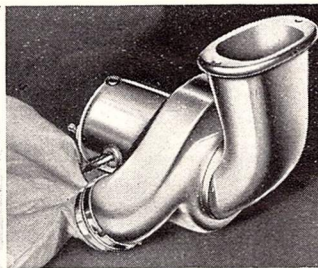
Disk is specially machined to insure proper adhesion of abrasive disks, and the use of "Distic" for applying disks adds the last touch of convenience to the machine. There is no need for messy gluing of disks, no removal of the disk from the machine, no waiting overnight for the new abrasive disks to dry. Abrasive disks can be renewed every few minutes if necessary.

Dust Collector is Practical

Owing to the efficient design of the housing on this machine, an exhaust collector for sawdust removal is really practical. No. 1429 collector applied to this sander makes it completely portable, independent of the shop blower system, and removes one of the drawbacks of the ordinary disk sander. The motor of this collector is of the universal type and will operate on 110 volts, A.C. or D.C. Supplied for 110-volt current.



No. 1425 Belt Driven Finishing Machine with No. 864 Miter Gage.



No. 1429 Sawdust Collector is practical and efficient.

(FOR PRICES SEE ATTACHED PRICE LIST)

Specifications

Overall dimensions: motor-drive bench model, 16 1/4" wide, 13 1/2" high, 22 3/4" front to rear. Belt-drive bench model, 16 1/4" wide, 13 1/2" high 17" front to rear. Table 9 3/4" x 16 1/4". Polished surface, with 3/8" x 3/4" slot for No. 864 miter gage. Table tilts 45 degrees to front and 20 degrees to back. Carried on rigid, well-designed trunnions, with large, convenient trunnion-lock knobs. Tilt scale on front trunnion.

DIRECT MOTOR DRIVEN MODELS

Cat. No.	Price
1426 Direct Motor Driven Abrasive Disk Finishing Machine with Table. 60 lbs. DISK	
1432 Steel Stand, Top: 12 1/2" x 16 1/2", 31 1/2" High, 49 lbs. DISK	
149 "Distic" for applying Disks, Per Stick. 1 lb. DISC	
864 Miter Gage for 3/8" x 3/4" Groove. 4 1/2 lbs. NECMI	
1434-C Complete Unit Consisting of all of the above without Motor. (Use a 1/2 H.P. Ball-Bearing Motor in 8 1/2" Frame, see Pages 48-49). 128 lbs. DISK	
1434 Same as 1434-C but without "Distic", Miter Gage or Motor. 124 lbs. DISK	

MOTORS RECOMMENDED:

LIGHT DUTY

No. 64 510	1/2 H.P. R.I. A.C. 110/220 V. 60 Cy.
No. 66 520	1/2 H.P. 3 Ph. A.C. 220/440 V. 50/60 Cy.
No. 68 510	1/2 H.P. D.C. 115 V.

MEDIUM DUTY

No. 64 710	3/4 H.P. R.I. A.C. 110/220 V. 60 Cy.
No. 66 720	3/4 H.P. 3 Ph. A.C. 220/440 V. 50/60 Cy.
No. 68 710	3/4 H.P. D.C. 115 V.

HEAVY DUTY

No. 64 910	1 H.P. R.I. A.C. 110/220 V. 60 Cy.
No. 66 920	1 H.P. 3 Ph. A.C. 220/440 V. 50/60 Cy.
No. 68 910	1 H.P. D.C. 115 V.

For 3 Ph. Motors Use No. 1320 3 Ph. Manual or No. 1329 Magnetic Starter and No. 1322 Mounting Parts.

Use 1334 Switch Rod for Single Phase Motors.

For Motors and Switches, See Pages 53 to 55.

BELT DRIVEN MODELS

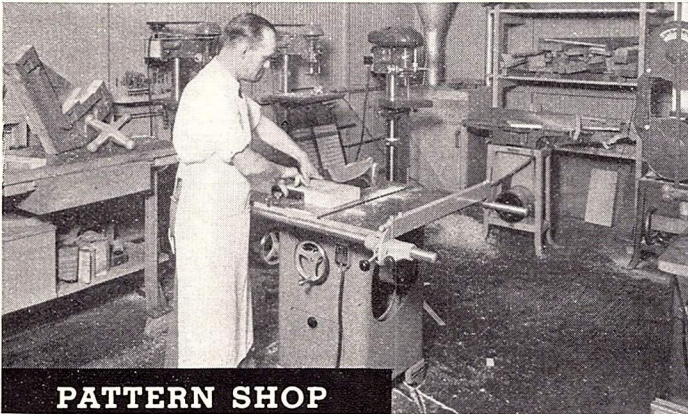
1425 Belt Driven Abrasive Disk Finishing Machine with Disk, Drive Shaft and 4" Arbor Pulley. 75 lbs. DISK	
1432 Steel Stand, Top: 12 1/2" x 16 1/2", 31 1/2" High. 49 lbs. DISK	
149 "Distic" for Applying Disks, Per Stick. 1 lb. DISC	
864 Miter Gage for 3/8" x 3/4" Groove. 4 1/2 lbs. NECMI	
583 V-Belt, 58 3/8" Ins. Cir. 60 1/4" Out. Cir. 1 lb. FORBL	
5450 4 1/2" Motor Pulley. 1 1/2 lbs. PULOO	
1433-C Complete Unit Consisting of all of the above without Motor and Switch Rod. 130 lbs. DISK	
1433 Same as 1433-C but without "Distic", Miter Gage, Motor or Switch Rod. 124 lbs. DISK	

ACCESSORIES

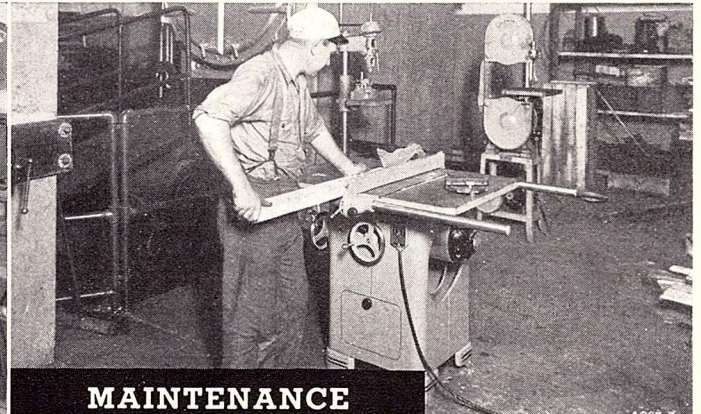
1429 Dust Collector and Adapter for 1426 Abrasive Disk Finishing Machine with Cloth Bag, 110 V. A.C. or D.C. Motor with Built-In Switch, Cord and Plug. 15 lbs. DISKT	
1428 12" Al. Oxide Disks for Metal, Medium, 6 per pkg. 3 lbs. DISKS	
1427 12" Garnet Disks, Medium 6 per pkg. 3 lbs. DISKR	

THE DELTA MANUFACTURING COMPANY • MILWAUKEE, WIS.

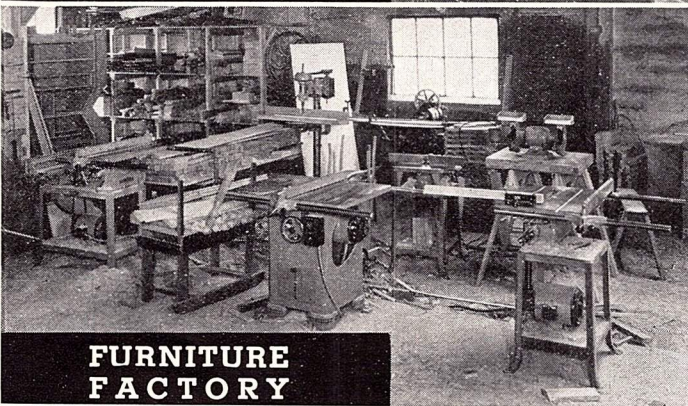
**DELTA INDUSTRIAL WOODWORKING TOOLS ARE
FOUND IN HUNDREDS OF SHOPS WHERE, DAY AFTER DAY,
THEY PROVIDE DEPENDABLE AND ECONOMICAL OPERATION**



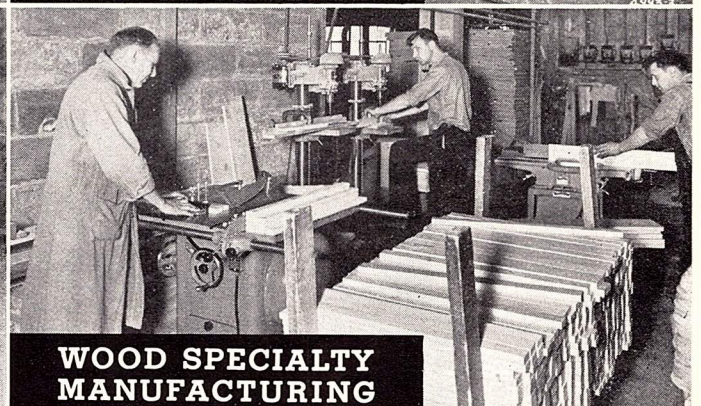
PATTERN SHOP



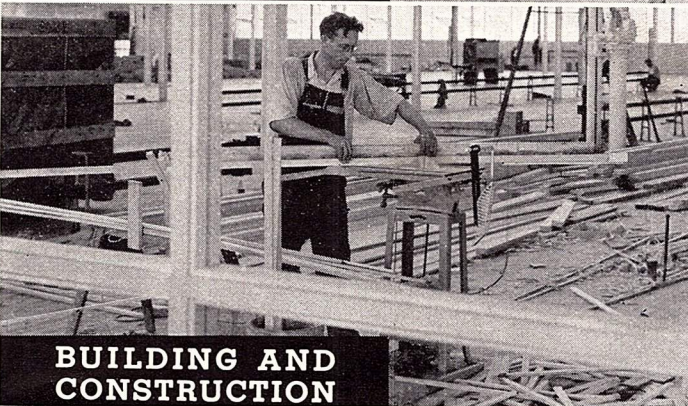
MAINTENANCE



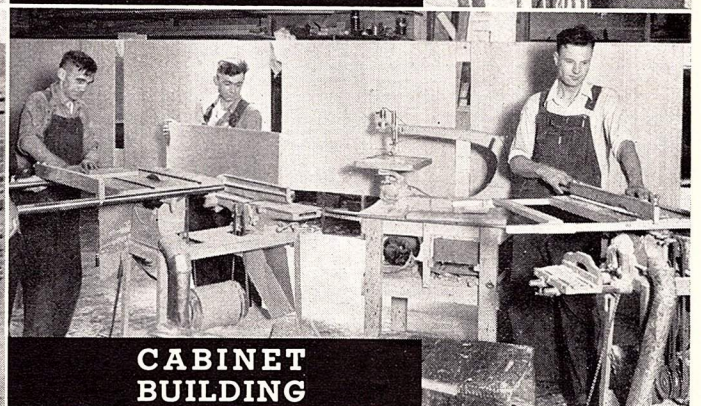
**FURNITURE
FACTORY**



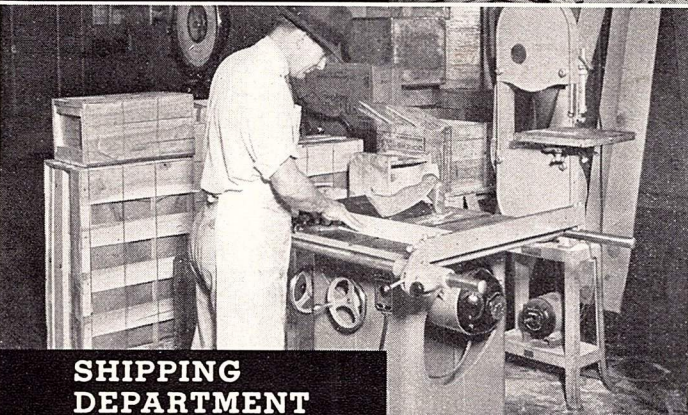
**WOOD SPECIALTY
MANUFACTURING**



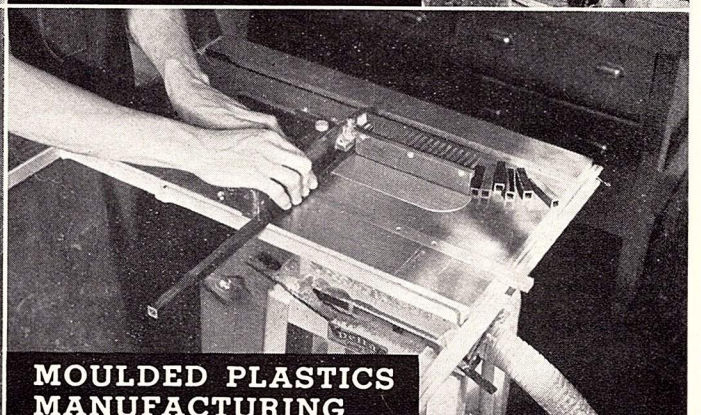
**BUILDING AND
CONSTRUCTION**



**CABINET
BUILDING**



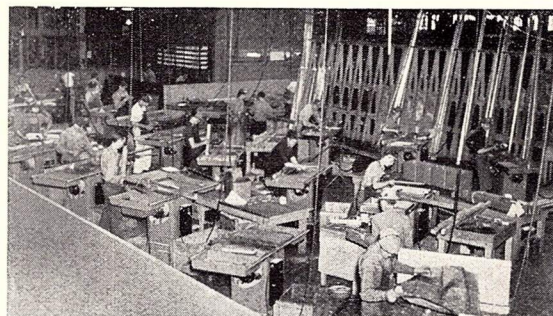
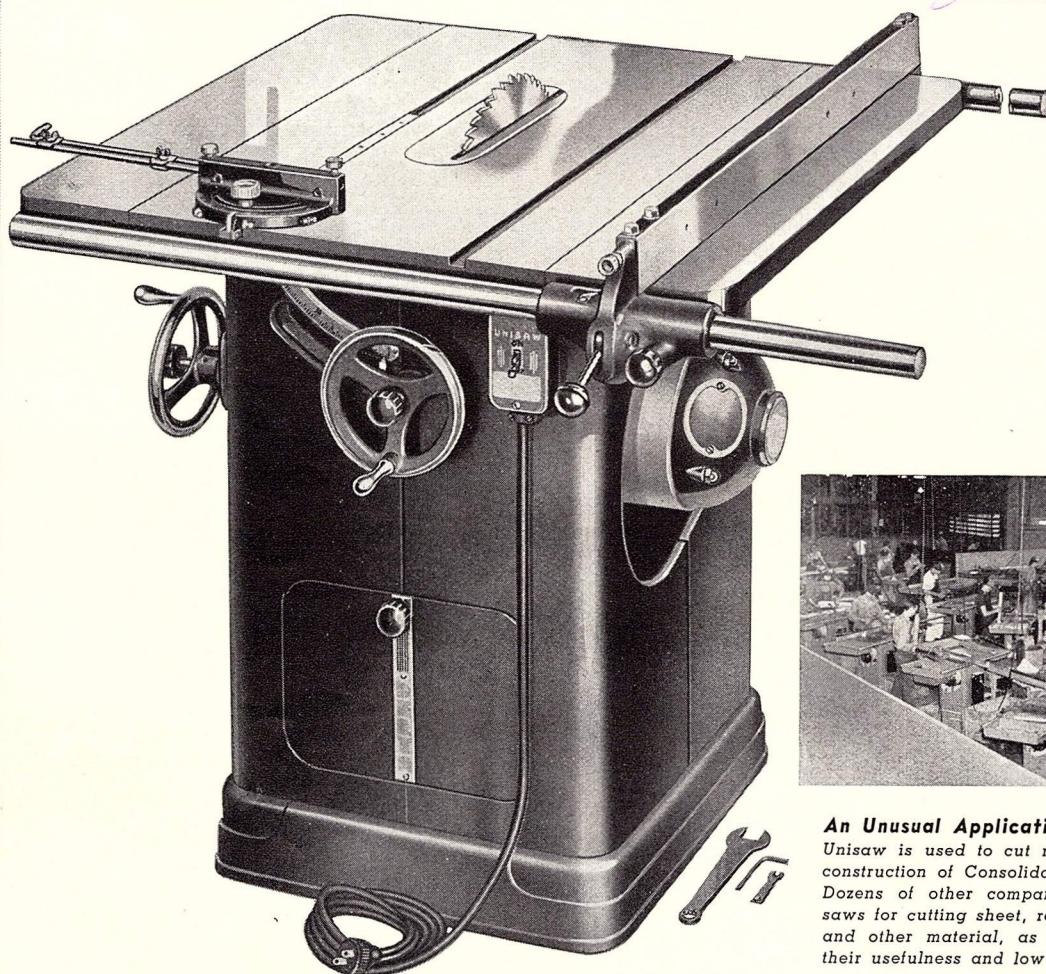
**SHIPPING
DEPARTMENT**



**MOULDED PLASTICS
MANUFACTURING**

THE DELTA MANUFACTURING COMPANY • MILWAUKEE, WIS.

A PERFECTED 10-INCH TILTING ARBOR SAW



An Unusual Application is shown here in that the Unisaw is used to cut metal shapes and forms in the construction of Consolidated flying boats and bombers. Dozens of other companies are using these versatile saws for cutting sheet, rod and tube stock of duralumin and other material, as alert shop men have realized their usefulness and low cost.

THOUSANDS OF SHOPS use the Unisaw for Production Work

The Unisaw, the first saw to incorporate all of the best features of saw design, is the best saw value on the market. So well did it meet modern production requirements that it was an immediate success with the result that it is being used by thousands of shops where its accuracy, power and all around convenience is almost unbelievable in the light of its low price.

It is completely self contained, motor and driving mechanism being enclosed in a handsome, modern, tremendously strong steel cabinet. The saw table is 20" x 27" (with wings 27" x 36") and will handle work up to 50" wide and 3 1/8" thick. Guide bars allow fence to be moved 24" to right of blade and 15" left of blade.

Saw blade tilts 45 degrees to right, operation being affected by a large convenient hand wheel. Blade is raised and lowered by another hand wheel at front of machine. Dado heads, moulding cutters and many other attachments may be used.

The carriage swings on exceptionally heavy trunnions which in turn are mounted in an ingenious manner on the heavy gusset plate at the top of the extremely rigid and strong steel casting. These trunnions are exceptionally large, heavy and strong and are completely machined.

The front trunnion carries the oilless bushing for the tilting shaft and is provided with finely machined teeth to engage the tilting worm, as well as with adjustable stops for accurate setting at 90 and 45 degrees.

Front and rear carriage members, which swing on the trunnions, carry oilless bronze bushings for the raising and lowering worm shaft. These eliminate an annoying lubrication problem for the user.

Ball-Bearing Arbor Bracket

The saw-arbor bracket in the Unisaw is a very heavy casting, with accurately machined teeth to fit the raising and lowering worm, and with accurate stop surfaces co-operating with the worm itself, to limit up and down travel. The casting itself is mounted on a very heavy keyed shaft upon which it can be adjusted and locked to bring the saw-arbor flange into exact alignment.

The shaft is carried in two sealed-for-life bearings, mounted in diamond-bored seats, and since it oscillates only slightly within these bearings, there is practically nothing to wear out.

Cat. No.	Price
1450 10" Tilting Arbor Unisaw with 20" x 27" Table, Micro Set Rip Fence, Combination Blade, Auto-Set Miter Gage, Extension Rip-Fence Graduated Guide Bars, Motor Pulley and 3 belts, without Guard, Splitter, Motor or Switch. 290 lbs. TILTA. (Specify cycle of Motor)	
1455 Side Extension Wings to make Table 27" x 36", Pair. 52 lbs. TILTF	
1454 Motor Cover—(See page 29). 39 lbs. TILTE	
1471 Super-Safe Guard (See Page 29). 11 lbs. TILGB	
865 Miter Gage Clamp Attachment (See page 52). 2 1/2 lbs. NECLA	
1450-C Complete Unisaw Consisting of all of the above without Motor or Switch. 375 lbs. TILTM	
291 V-Belt for 60 cy. Unisaw Motors, (3 required) 12 oz. BELTW	
281 V-Belt for 50 cy. Unisaw Motors (3 required) 12 oz. BELTX	
1451 Standard table insert. 1 1/4 lbs. TILTB	

(FOR PRICES SEE ATTACHED PRICE LIST)

THE DELTA MANUFACTURING COMPANY • MILWAUKEE, WIS.

CLOSE inspection of the table reveals that it is scientifically ribbed and designed to prevent warping and springing.

Controls are conveniently located at proper height. The substantial hand wheels, with plenty of room, insure no skinned knuckles. Locked in position by large knob at center.

The bar is of heavy steel, formed, braced and welded into one solid, rigid unit, which will not warp. The gage is carried by a new and very large, husky bracket riding on the front bar, and equipped with quick-acting cam lock and micrometer adjustment. The micrometer adjustment is of the rack-and-pinion type, and can be snapped into or out of engagement at will.

The rip-fence bar extends clear over the rear edge of the table—many inches past the rear of the saw blade. This is an important safety feature, as many operators regard a short fence as extremely dangerous. The fence is locked to both front and rear guide bars, (patented) the rear lock being operated from the front of the gage. The fence can be used on both sides of the blade.

Super Safe Guard Provides Perfect Protection

Provides maximum protection because it combines basket, splitter and kick-back fingers in one unit. The No. 1471 "Super-Safe" splitter-mounted guard shown at right is anchored directly to the arbor bracket so that when the saw is tilted the guard follows the saw—thus complete protection is always assured no matter at what angle the saw is set.

The basket is held rigidly in place but is free to pivot up and down to accommodate the work, of any thickness, within the range of the saw, yet covering the saw at all times.

The splitter prevents wedging of the sawed wood against the blade. The kick-back fingers prevent the work being kicked back against the operator if the wood pinches on the saw blades.

These guards protect operator.

No. 1471 "Super-safe" guard is splitter mounted and tilts with the saw. May be easily removed for dadoing or grooving. Supplied with splitter and kick-back fingers.

No. 1471 "Super-safe" splitter mounted guard.....
Shipping weight 11 lbs. Code word TILGB.

No. 1473 Splitter and kick-back fingers.....
Shipping weight 1 lb. Code word TILGD.

MOTORS FOR THE UNISAW

Unisaw motors are (1) fully enclosed to exclude dust and dirt (2) have very high reserve power (3) dependable even under abuse and (4) provide economical performance over a long life. Have large size 8½" frame with ball bearings—standard speed 1725 R.P.M.—¾" shaft.

REPULSION INDUCTION motors are supplied with a double pole switch, completely wired—with cord and plug.

THREE PHASE motors are supplied with a large conduit box—wire leads for either 220 or 440 volts. Do not have switch, cord or plug. 1½ H.P. motor not fully enclosed.

DIRECT CURRENT motors are supplied with a double pole switch completely wired—with cord and plug.

Cat. No.	Old No.	Type	Current	R.P.M.	Volts	Cycles	Code	Sh. Wt. lbs.
----------	---------	------	---------	--------	-------	--------	------	--------------

FOR MEDIUM DUTY

67 010	8450-60	3 Ph.	AC	1425-1725	220/440	50/60	EACMA	70
--------	---------	-------	----	-----------	---------	-------	-------	----

FOR HEAVY DUTY

65 010	8300	R.I.	AC	1725	110/220	60	EACIA	85
65 015	8310	R.I.	AC	1425	110/220	50	EACIU	85
*67 060	8470	3 Ph.	AC	1425	220/440	25		70
†67 210	8500-8510	3 Ph.	AC	1425-1725	220/440	50/60	EACRA	80
69 010	8700	Dir. Cur.	DC	1725	115	.....	EDCOB	85
69 011	8701	Dir. Cur.	DC	1725	230	.....	EDCOP	85

*These motors are special and delivery requires 10 to 16 weeks after receipt of order.

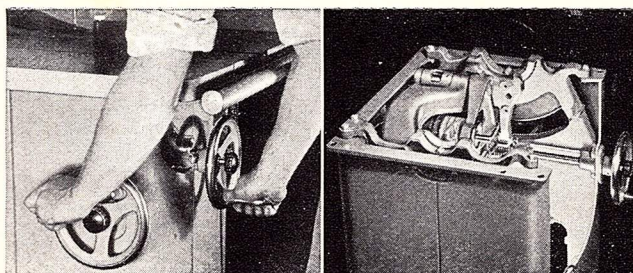
†67 210 Motor is 1½ H. P., all others listed are 1 H. P.

Switch Equipment for 3 Phase Motors

No. 1320 Three phase manual starter. Specify motor number for which it is to be used when ordering.....
Shipping weight 6 lbs. Code word SWIPH.

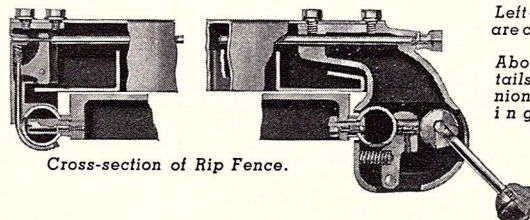
No. 1329 Three phase magnetic starter. Specify motor number for which it is to be used when ordering.....
Shipping weight 6 lbs. Code word SWITD.

No. 1459 Parts for mounting No. 1320 or No. 1329 switch on tilting arbor saw cabinet.....
Shipping weight 2 lbs. Code word TILTK.

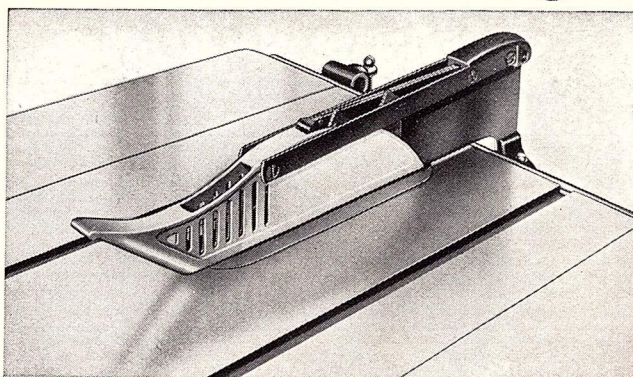


Left—Controls are convenient.

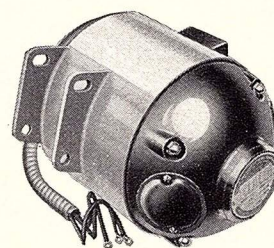
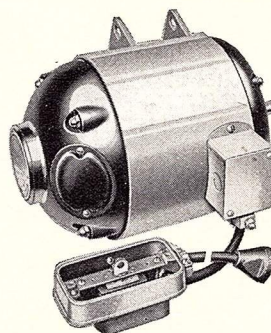
Above—Details of trunnions, operating mechanism.



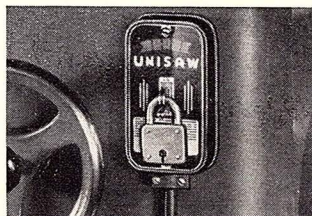
Cross-section of Rip Fence.



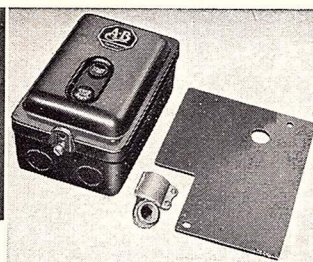
No. 1471 Super safe guard.



Above—3 phase motor
Left — Repulsion Induction and D.C. Motors—have cord, switch and plug.



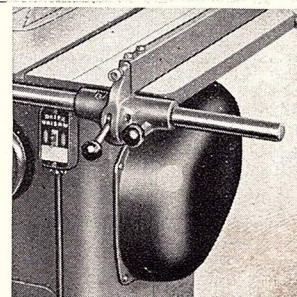
STD. Switch may be locked.
Right—Nos. 1320 and 1459.



MOTOR HOUSING

This cast iron cover completely encloses the opening in which the motor swings, and provides an additional safety factor for the machine when used as school equipment. The cover is readily attached to the housing.

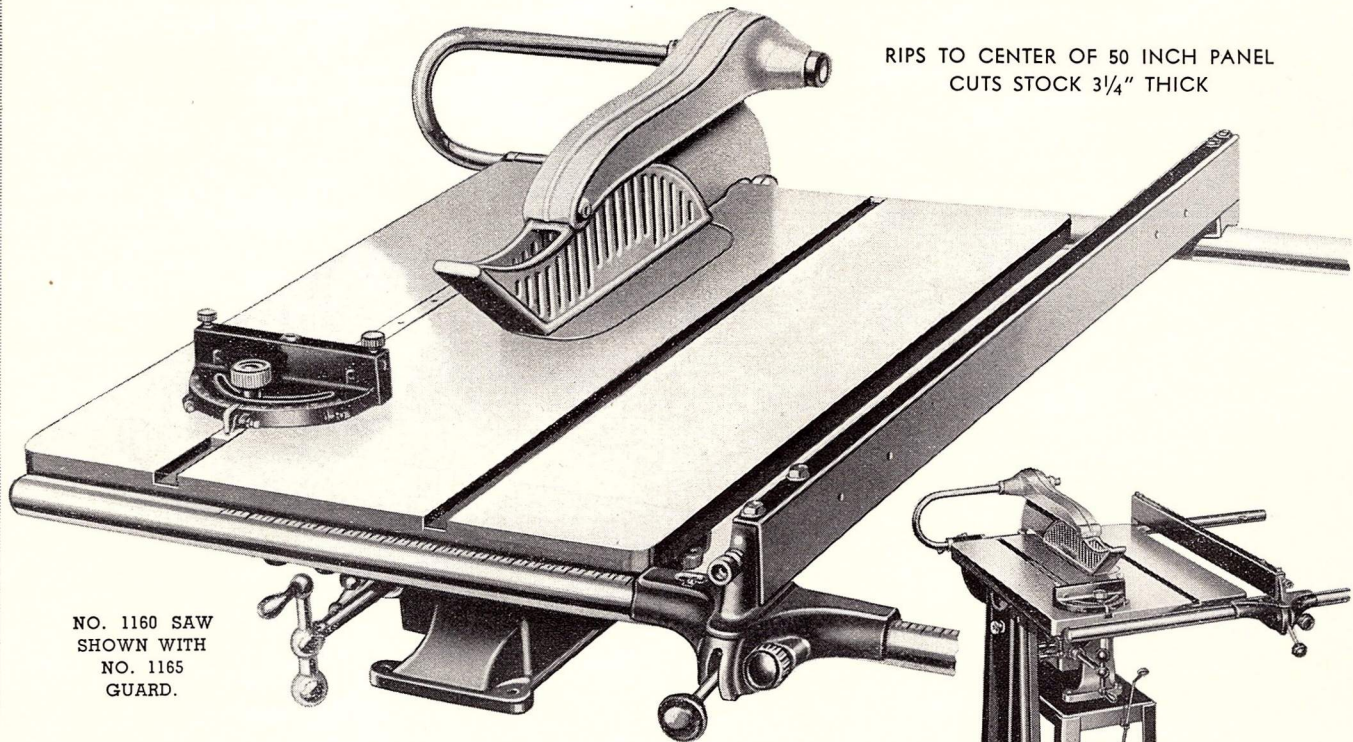
No. 1454—Motor cover for housing of No. 1450 Unisaw. With screws, Each.....
Shipping weight 25 Lbs. Code word TILTE.



(FOR PRICES SEE ATTACHED PRICE LIST)

THE DELTA MANUFACTURING COMPANY • MILWAUKEE, WIS.

THE BEST 10-INCH TILTING TABLE SAW MADE



NO. 1160 SAW
SHOWN WITH
NO. 1165
GUARD.

RIPS TO CENTER OF 50 INCH PANEL
CUTS STOCK $3\frac{1}{4}$ " THICK

This 10" circular saw was built with just one thought in mind: To produce a saw that would offer more accuracy, more capacity, more conveniences, more built-in value than any similar saw on the market, regardless of price.

That this objective has been achieved will be recognized by every mechanic as soon as the No. 1160 circular saw is examined. From the heavy-walled tubes that form the rip-fence guide bars—a full $1\frac{1}{2}$ inch in diameter, and stronger to resist bending and torsional stresses than any other section of equal weight—to the hidden but important alloy-steel arbor with its self-sealed New Departure ball bearings, every detail has been worked out to give the utmost satisfaction to the user.

The "Micro-Set" rip fence is carried on a heavy casting at the front, locked to the front guide bar by a neat cam lever with a Bakelite ball handle. The rear lock is operated from the front also, so that the hands, never need be near the blade when locking the fence. And it is impossible for this fence to move or spring. The miter gage is the famous "Auto-Set" miter gage with individual adjustments for 45 and 90 degree settings.

Crosscuts Stock 12 Inches Wide

From the saw blade to the front edge of the table surface measures $12\frac{1}{2}$ " wide, so that stock a full 12" wide and $3\frac{1}{4}$ " thick can be cut easily, with full bearing on the table surface for both the work and the miter gage. And in providing adequate surface in front of the blade, this has not been done at the expense of the rear surface, for there are 5" of table behind the blade to support the work as it leaves the saw.

Many Features That Mean More Satisfaction For You!

Consider the "Auto-Set" miter gage, widely imitated by others, but the only miter gage offering you individually adjustable stops, to assure you of absolute accuracy in setting. And the adjusting screws in the table insert, which enable you to set the insert exactly level with the table. Consider the "hidden values"—the extra machining for accuracy (like the machining of the table-insert opening, instead of leaving this just rough) and the diamond-boring of the ball bearing seats for absolute accuracy.

NO. 1175-C
SHOWN WITH
MOTOR

Contrast the details of design shown above and on the following pages with those you will find in any similar saw anywhere. We believe you will then realize the extra value built into these saws!

Cat. No.	Price
1160 10" Tilting-Table Circular Saw with Auto-Set Miter Gage, Combination Blade, Micro-Set Rip Fence, Graduated Front Rip Fence Guide Bar, Plain Rear Guide Bar, without Motor, Motor Pulley, Belt or Guard. 190 lbs. TENSE.....	
891 Steel Stand, Top: $7\frac{7}{8}$ " x $15\frac{1}{2}$ ", 24" High, 31 lbs. LABST..	
1173 Belt Guard. 36 lbs. TENBG.....	
1165 Swing Guard Complete (See Page 34). 19 lbs. TENS.....	
1166 Splitter Attachment (See Page 34). 5 lbs. TENS.....	
865 Miter Gage Clamp Attachment (See Page 51). $2\frac{1}{2}$ lbs. NECLA	
530 V-Belt for use with 891 Stand. 1 lb. BELTD.....	
5500 5" Motor Pulley, Specify $\frac{3}{4}$ " Bore. $1\frac{1}{2}$ lbs. PULOH.....	
1175-C Complete 10" Saw Unit Consisting of all of the above without Motor or Switch Rod. 283 lbs. TENS.....	
1175 Same as 1175-C but without Saw Guard, Splitter, Miter Gage Clamp, Belt Guard, Motor or Switch Rod. 221 lbs. TENS.....	
560 V-Belt for use only with No. 1168 Comb. Stand. 1 lb. EICVB.....	
1163 Standard Table Insert. $1\frac{1}{2}$ lbs. TENS.....	

MOTORS RECOMMENDED:

LIGHT DUTY:	No. 64 510	$\frac{1}{2}$ H.P. R.I. A.C. 110/220 V. 60 Cy.
	No. 66 520	$\frac{1}{2}$ H.P. 3 Ph. A.C. 220/440 V. 50/60 Cy.
	No. 68 510	$\frac{1}{2}$ H.P. D.C. 115 V.
MEDIUM DUTY:	No. 64 710	$\frac{3}{4}$ H.P. R.I. A.C. 110/220 V. 60 Cy.
	No. 66 720	$\frac{3}{4}$ H.P. 3 Ph. A.C. 220/440 V. 50/60 Cy.
	No. 68 710	$\frac{3}{4}$ H.P. D.C. 115 V.
HEAVY DUTY:	No. 64 910	1 H.P. R.I. A.C. 110/220 V. 60 Cy.
	No. 66 920	1 H.P. 3 Ph. A.C. 220/440 V. 50/60 Cy.
	No. 68 910	1 H.P. D.C. 115 V.

For 3 Ph. Motors Use No. 1320 3 Ph. Manual Starter and 1322 Mounting Parts.

Use No. 1330 Switch Rod for Single Phase Motors.

See Pages 53 to 55 for Motors and Switches.

(FOR PRICES SEE ATTACHED PRICE LIST)

THE DELTA MANUFACTURING COMPANY • MILWAUKEE, WIS.

Design Advantages As Found Only In This Remarkable Saw

The solid alloy-steel arbor is carried in "Sealed for Life" New Departure ball bearings (not merely shielded bearings). There are no lubrication problems with these ball bearings, and they require no attention whatever during their entire life. All our bearings are mounted in accordance with the best ball-bearing practice—not merely mounted in the cheapest possible way, which sometimes injures the accuracy of the bearings even before they are used.

Rips to Center of 50" Panel

Most saw tables—even in 10" size—are too small. So in designing this saw we produced a 20" x 27" table surface for the standard machine. In front of the blade—the "Zone of Service" where surface is most needed, there is 12½" of table space, so that a 12" board to be crosscut is supported in its whole width by the table, and the miter gage also has ample bearing on the table. And there is ample surface—5"—in back of the blade also!

Table itself is an exceptionally heavy, strongly ribbed casting

The rip-fence guide bars are a typical improvement. They are heavy walled tubes, 1⅜" diameter, chosen because tubes, as every mechanic knows, resist bending and torsional stresses better than any bar section of equal weight. They therefore hold the fence rigid and in perfect alignment under all circumstances. And, with the STANDARD guide bars, the saw will rip to the center of a 50" panel without the necessity of changing guide bars.

Cross Cuts 12" wide—3¼" deep (Photos A and B)

Brackets are furnished with the machine so that an auxiliary wood table may be added between the bars if desired, thus making the actual table surface 27" x 34".

As photos A and B show, the saw will rip through a 3¼" plank with ease, and it will crosscut 3¼" x 12" lumber equally well. This extra capacity is one of the many superior features of this machine, which make it the best value ever offered at such a low price.

Rip Fence is marvel of convenience (Photos C and D).

The Micro-Set Rip Fence, Photo C, is a marvel of convenience and strength. The massive casting riding on the graduated front bar carries the fence itself, and in it is housed the "Micro-Set" pinion, which snaps into or out of engagement with the rack on the underside of the bar at a touch of the finger. The pinion carries on its outer end a large knob for the fine adjustment. Observe the convenient cam and lever lock, with its comfortable Bakelite knob. A flip of the finger and the fence is unlocked. A light pressure of the hand and it is reclamped—and SELF ALIGNED. Photo D shows the underside of the Rip Fence block, with its heavy cam lock and accurate rack.

Rear Rip-Fence Lock. (Photo E)

The patented construction not only provides a rigid rip fence, locked to the guides bars at front and rear, but in this saw all the fence controls are at the front—no reaching over the saw blade to loosen or tighten the rear lock. More convenience and safety!

Worm-Gear Tilting (Photo F)

The table is positively tilted by means of a worm and rack, the worm operated by means of another comfortable ball crank. Accurate and convenient etched scales are provided for height and tilting adjustments, each provided with an adjustable pointer for accuracy. The adjustable height pointer is especially useful for dado and similar work.

Quick-Acting Inserts. (Photo G)

Table inserts are fitted in machined openings in the table—not rough cast holes. They are instantly snapped in or out with a touch of the finger—no screws to loosen. And (U. S. Pat. No. 2,020,222) they are provided with adjusting screws so they may be made to lie exactly flush with the table.

Machined Ways. (Photo H)

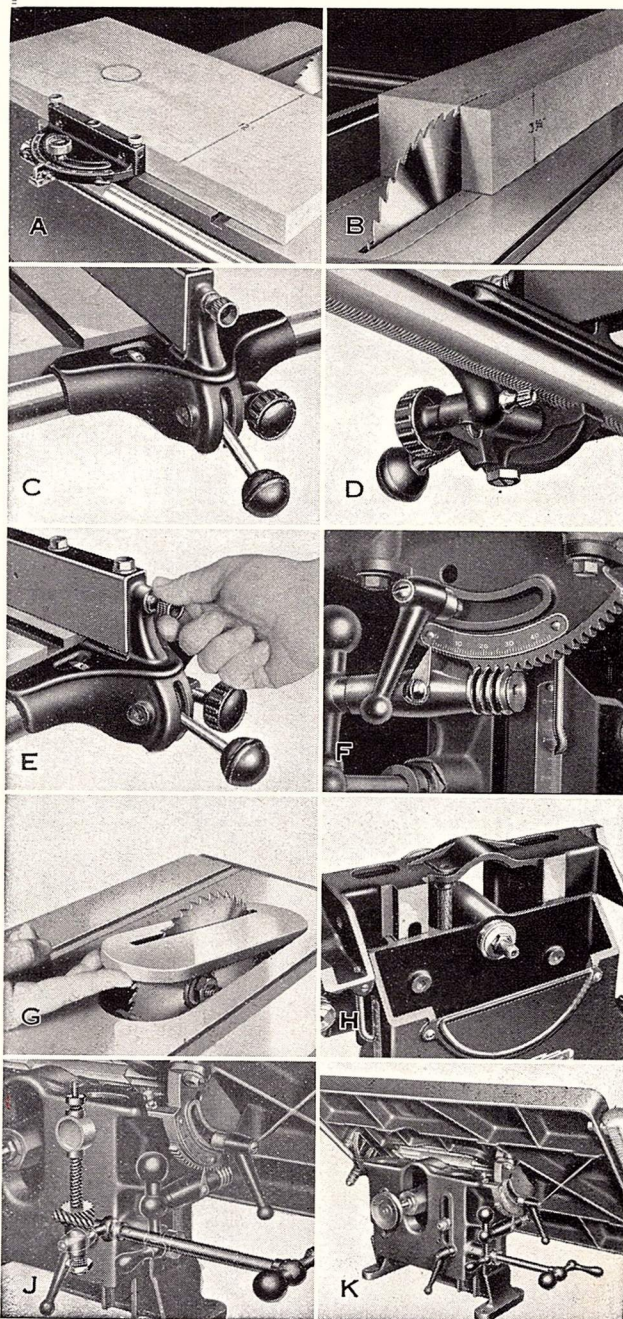
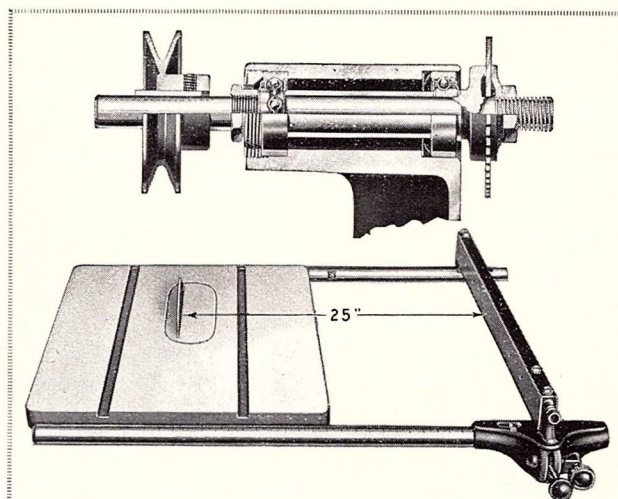
There are cheaper ways of fitting the table to the blade than that employed on this saw, but none of these was thought satisfactory enough for a good machine . . . so the table is elevated and lowered on machined ways, the front one being gibbed for adjustment if this should ever be necessary.

Raising Mechanism. (Photo I)

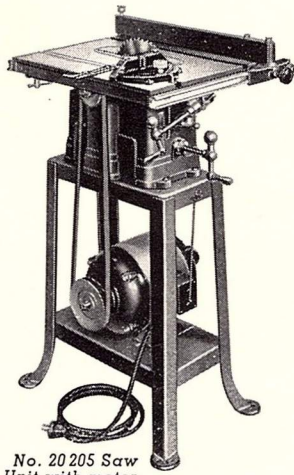
Table raising and lowering is done by means of a helical gear on a shaft operated by a comfortable, free-handle ball crank. The gear meshes with another running on the ball-bearing raising screw, elevating or lowering the table with ease and speed. The pitch of the screws is chosen to provide a fast movement, while at the same time it is fine enough for close adjustment of depth.

Massive Construction. (Photo K)

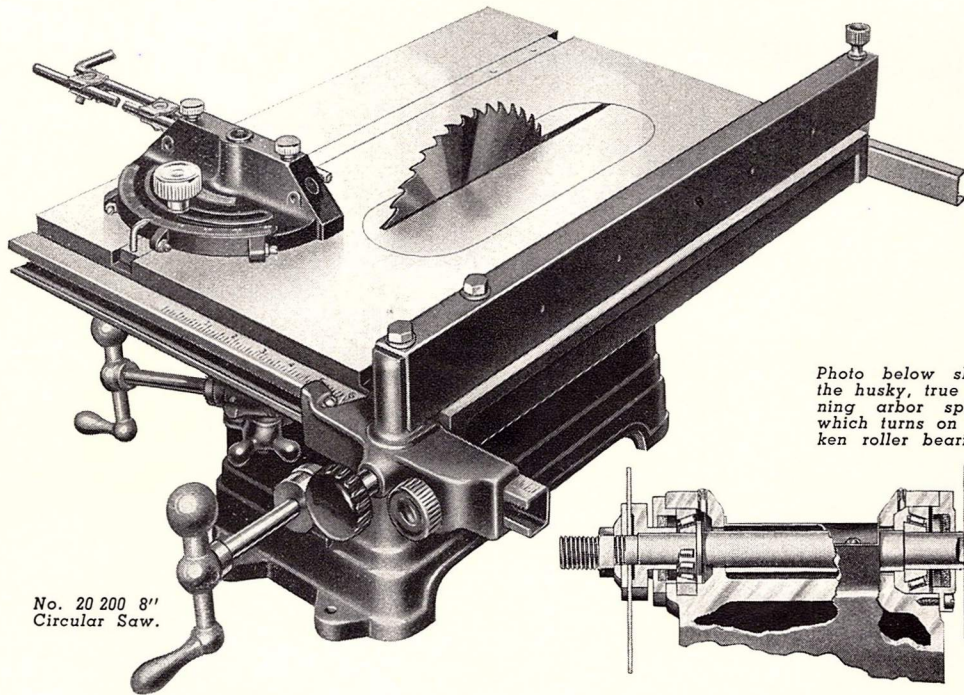
Photo K at right shows the table tilted to 45 degrees. Notice the scientifically ribbed and very heavy table, swinging on massive trunnions. This is a more expensive construction, but is the only one that permits the safety of a very narrow opening around the saw blade, since the table tilts in the plane of the table surface.



NEW 8" SAW IS THE LAST WORD IN SAW DESIGN



No. 20 205 Saw Unit with motor.



No. 20 200 8" Circular Saw.

Photo below shows the husky, true running arbor spindle which turns on Timken roller bearings.

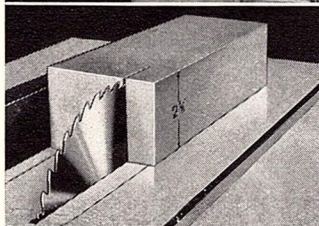
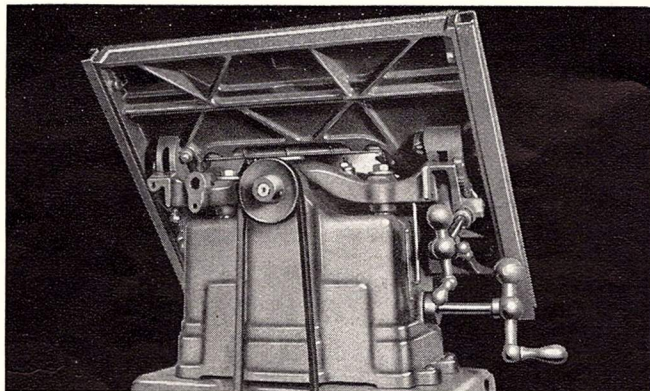
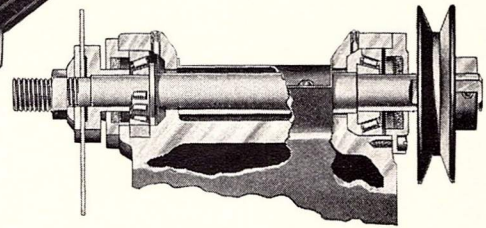
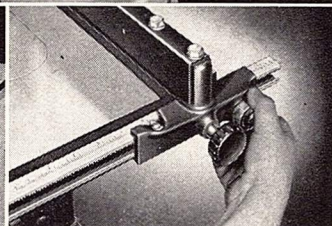
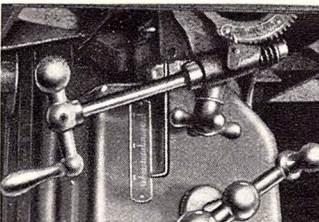


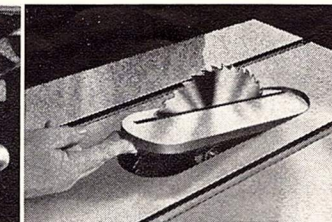
Table inserts are easily removed. Held in place by spring. Have adjusting screws so they lie perfectly flush.



Rip fence locked in place by large convenient knob. Note fine adjusted screw and graduated guide bar.



Convenient depth and angle scales point accurate setting of saw.



Maximum usefulness of the saw blade is obtained by proper design so a full 2 1/8" can be cut.

NEW 8 INCH SAW INCORPORATES FEATURES OF ACCURACY and UTILITY NOT AVAILABLE BEFORE

After building tens of thousands of saws which are used in shops of all sizes and descriptions we have now made a saw which we believe is far superior to other saws of this type.

All of the experience and knowledge gathered in making other fine saws has guided our engineers in the design and construction of this new unit. Nothing has been spared to make it the best saw we know. Its accuracy, sturdiness and convenience set it aside from all other units. And although it has these remarkable advantages, our exclusive production methods allow this saw to be sold for a price far below its estimated value.

The first photo to the left shows the husky, solid construction of this new saw. Notice its apparent simple design—its lack of fussiness. Its sturdy cross-sections of iron are full and heavy. Notice the fully machined cast iron tilting trunnions on which the table tilts. They hold their shape and insure permanent and perfect alignment of blade with table and fence.

This new saw will rip stock 2 1/8" thick and will cut to the center of an 18" panel—with the table extension (No. 20 825) it will rip to the center of a 48" panel and will miter boards 13" or 14" wide because it has 12" from the saw to the end of the table.

Table tilts 45 degrees and is locked in position by a positive tight holding clamp. Tilting, raising and lowering are done by means of free-running ball crank handle. Accurate, adjustable scale plates facilitate setting of saw.

The arbor—the heart of the saw—uses the famous Timken bearings which have made our other saws so popular. The heavy steel arbor is precision ground—an extra operation—but by doing it you are assured perfect accuracy. Arbor is 5/8" in diameter and has accurately cut Acme threads which provide greater strength and a true outside diameter for wide attachment when used in place of a narrow saw blade.

Rip fence, usable on both sides of the blade, is clamped firmly by means of the convenient knob. It can be accurately set by

the small knob at right. An adjustable pointer indicates the setting on the graduated front guide bar.

This new saw will take our dado head, moulding cutter and abrasive wheels. The table insert is instantly removable.

Available also in a sturdy guard which tilts with the table so that the blade is always covered. The splitter with kickback fingers provides additional safety in that it keeps the saw from binding and prevents work from being kicked out by the blade. Splitter also tilts with blade.

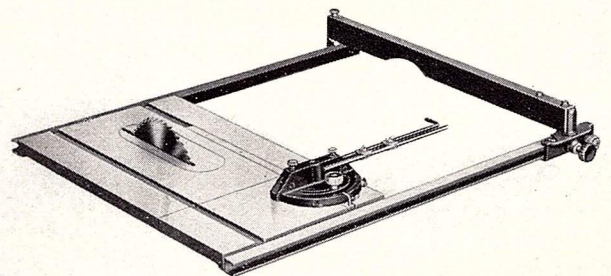
The Auto-set miter gage has adjustable stops at 45 and 90 degrees.

Table is 18 $\frac{3}{4}$ " long, 15" wide. With extension, 23" long and 32" wide. Overall height 12 $\frac{1}{2}$ ". Rips to center of 18" panel, with extension to 48" panel. Cuts 2 $\frac{1}{8}$ " thick.

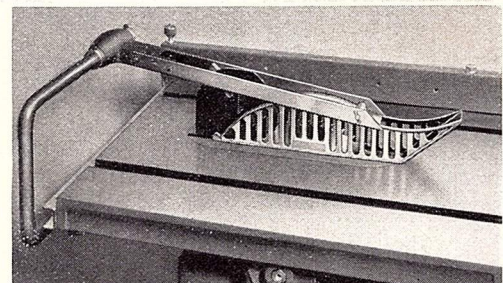
- 20 200 8" circular saw with auto set mitre gage, micro-adjustment rip gage, arbor pulley, and No. 325 saw blade. Code Wd. SAWAA
- 20 825 extension attachment with front table extension 32" rip gage guide bars along with fence bar only, nuts and bolts. Code Word SAWAE
- 20 203 8" circular saw complete with 20 825 extension attachment but without standard rip gage bar or standard guide bar. Code Word SAWAB
- 20 205 8" Timken bearing circular saw unit consisting of the following, 20 200 8" circular saw, No. 5500 V pulley, $\frac{1}{4}$ " bore, No. 520 V belt 23" center to center, No. 891 steel stand without chute. Code Wd. SAWAC
- 20 207 8" Timken bearing circular saw unit with extension attachment consisting of the following: 20 203 8" circular saw with extension attachment, No. 5500 V Pulley, No. 520 V belt, No. 891 steel stand without chute. Code Word SAWAD
- 20 826 Standard Table Insert. Code Word SAWAF
- 20 827 Dado Head Table Insert. Code Wd. SAWAG
- 20 828 Moulding Cutter Table Insert. Code Wd. SAWAH
- 20 829 Swing Guard for No. 20 200 Circular Saw, complete with Bracket, Support Rod, Pivot Arms, Guard Basket, Collars and Screws. Code Wd. SAWAI
- 20 830 Splitter Attachment for No. 20 200 Circular Saw, consisting of Splitters, Splitter Bracket with Clamp Plate and Screws, and Kickback Fingers. Code SAWAJ
- 20 831 Abrasive Wheel Guard with Bracket and Arm to fit Circular Saw No. 20 200. Code Word SAWAK
- 20 836 Heavy Duty Moulding Cutter Set Complete with 4 Sets of High Speed Cutters, Styles A, B, C, and D. Oval Table Insert, Heavy Duty Cutter Head, Wrench and Complete Instructions. Code Wd. SAWAL
- 30 136 V-Belt Cir.: In. 55-13/16", Out. 57 $\frac{5}{8}$ ". BELTY
- 325 8" Combination Rip and Cross Cut Blade for 8" Saw. $\frac{5}{8}$ " Hole. 1 $\frac{1}{2}$ lbs. Code Word EICBL
- 326 8" Hollow Ground Blade for 8" Saw. $\frac{5}{8}$ " Hole. 1 $\frac{1}{2}$ lbs. Code Word EICSP
- 334 8" Rip Saw Blade for 8" Saw. $\frac{5}{8}$ " Hole. 1 $\frac{1}{2}$ lbs. Code Wd. EICBR
- 335 8" Cross Cut Saw Blade for 8" Saw. $\frac{5}{8}$ " Hole. 1 $\frac{1}{2}$ lbs. Code Word EICBC

MOTORS RECOMMENDED:

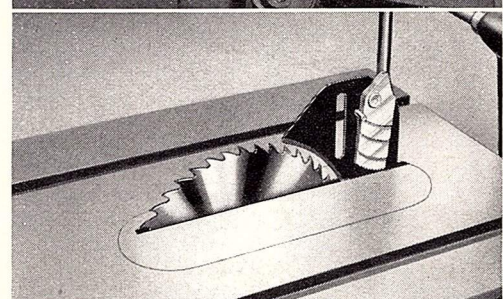
- LIGHT DUTY: 64 510 $\frac{1}{2}$ H.P. RI. AC. 110/220 V. 60 Cy.
 66 520 $\frac{1}{2}$ H.P. 3 Ph. AC. 220/440 V. 50/60 Cy.
 68 510 $\frac{1}{2}$ H.P. DC. 115 V.



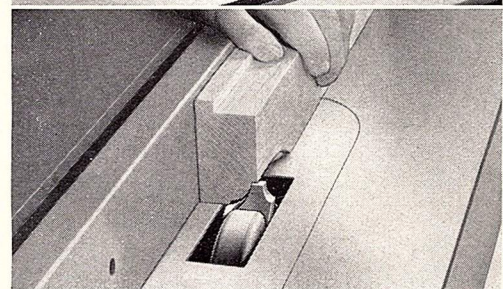
Above — see how the table extension gives ample working surface, increases usefulness of saw.



Right — No. 20 829 Swing back guard provides complete protection.



No. 20 830 Splitter and kick back fingers.



Mouldings are easily made by using the No. 20 836 moulding cutter set.

- MEDIUM DUTY: 64 710 $\frac{3}{4}$ H.P. RI. AC. 110/220 V. 60 Cy.
 66 720 $\frac{3}{4}$ H.P. 3 Ph. AC. 220/440 V. 50/60 Cy.
 68 710 $\frac{3}{4}$ H.P. DC. 115 V.
- HEAVY DUTY: 64 910 1 H.P. RI. AC. 110/220 V. 60 Cy.
 66 920 1 H.P. 3 Ph. AC. 220/440 V. 50/60 Cy.
 68 910 1 H.P. DC. 115 V.

ACCESSORIES FOR OTHER 8 INCH CIRCULAR SAWS

The new No. 20 200 Circular Saw described on these pages replaces the No. 860 unit which has been discontinued. The older saw was so popular that thousands of them are in daily use and so that their usefulness will be continued we list here all of the accessories which fit this particular saw.

- No. 866 Table Extension for No. 860 Saw consisting of Front Table Extension, 32" Rip Gage Guide Bars, Long Rip Fence Bar only with nuts and bolts. 22 lbs. NECXT
- No. 869 Long Rip Fence complete with Brackets. 10 lbs. NECCO
- No. 870 Standard Table Insert for No. 860 Saw. 2 lbs. NECIN
- No. 874 Dado Head Table Insert for No. 860 Saw. 2 lbs. NECDA
- No. 875 Raising Block for No. 860 Saw on Nos. 361 and 1356 Stands. 10 lbs. NECRB
- No. 863 Swing Back Guard for No. 860 Saw complete with Bracket, Support Rod, Pivot Arms, Guard Basket, Collars and Screws. 8 lbs. NECGA
- No. 867 Splitter Attachment for No. 863 Guard consisting of 3 Splitters and 2 Collars. 3 lbs. NECSB
- No. 877 Combination Splitter and Kickback for No. 863 Guard, consisting of 3 Splitters, Kickback Fingers and 2 Collars. 3 lbs. NECSC

- No. 230 Complete Abrasive Wheel Guard for No. 860 Saw, consisting of Mounting Bracket Swing Arm and No. 231 Cast Iron Top Guard. 10 lbs. BAKEJ
- No. 231 Cast iron Top Guard only for No. 230 Guard. 7 lbs. GURDA

HEAVY DUTY MOULDING CUTTER SETS

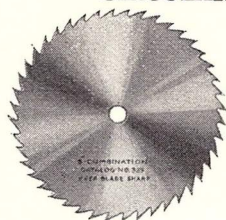
Heavy Duty Sets for Production or Continuous Use

- No. 859—Heavy-Duty Moulding Cutter Set, to fit $\frac{5}{8}$ " arbor of the No. 860 circular saw complete with heavy-duty steel cutterhead, 4 sets of high speed knives, styles A, B, C, and D, oval table insert, micro-guide fence, wrench, complete instructions. 12 lbs. Code Word MOUHL
- No. 267—Heavy-Duty Moulding Cutter Set for other makes of circular saws with arbor up to $\frac{7}{8}$ " diameter. Price includes boring up to $\frac{5}{8}$ ", $\frac{3}{4}$ ", or $\frac{7}{8}$ " diameter. Consists of Heavy-Duty steel cutter-head, 4 sets of high speed knives, style A, B, C, and D, wrench. Without oval table insert, micro-guide fence. Specify bore wanted. (Wood facings are used on standard fences of saws when moulding cutter is used). 5 lbs. Code Word MOUHK
- No. 872—Moulding Cutter Insert only, to fit No. 860 circular saw. 1 $\frac{1}{2}$ lbs. Code Word NECIO
- No. 868—Moulding Cutter Fence for No. 860 Saw. 20 $\frac{3}{4}$ " long. 7 lbs. NECFE

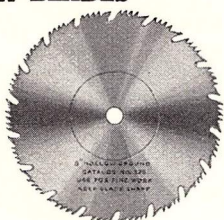
(FOR PRICES SEE ATTACHED PRICE LIST)

THE DELTA MANUFACTURING COMPANY • MILWAUKEE, WIS.

CIRCULAR SAW BLADES

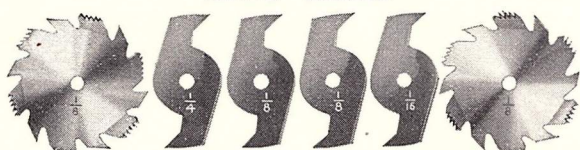


No. 1015

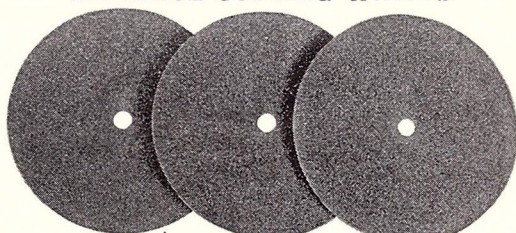


No. 1016

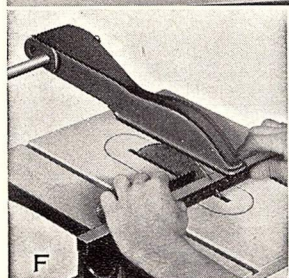
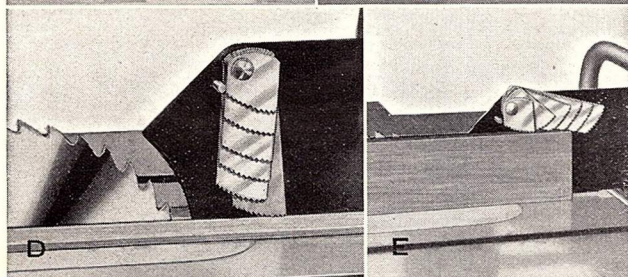
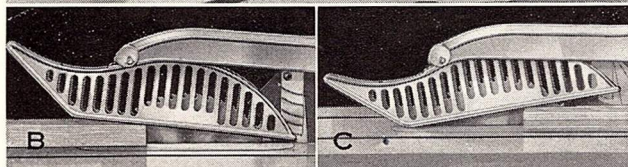
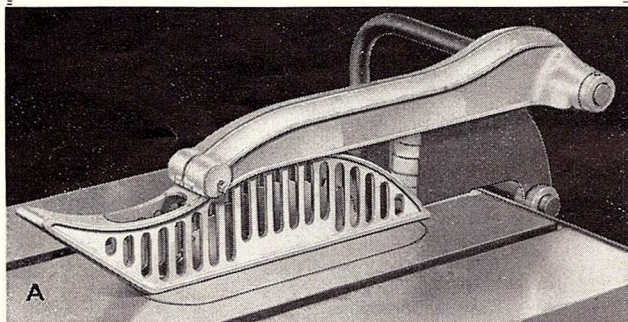
DADO HEADS



ABRASIVE CUTTING WHEELS



SAW GUARDS AND SPLITTERS



Left: Photo F, This illustrates the cast iron guard, arm and bracket used when abrasive wheels, listed above, are used with the circular saws. Strong, rigid and heavy, these guards offer complete protection to the operator when cutting tile, metal, brick, etc.

Accessories for 10 Inch Circular Saws

- No. 1017 10" Special Rip Blade for No. 1160 or 1450 Circular Saw.....
Shipping weight 2 Lbs. Code word TENSS.
No. 1018 10" Special Crosscut Blade for 1160 or 1450 Circular Saw.....
Shipping weight 2 lbs. Code word TENST.

Combination Blades

Our Combination Saw Blade is a double-purpose blade, which rips and cross-cuts equally well. Teeth have proper set for free cutting. Made of high grade steel, properly tempered and tensioned.

- No. 1015 10" Combination Rip and Cross-cut Blade for No. 1160 or 1450 Circular Saw
 $\frac{5}{8}$ " arbor hole. Shipping weight 2 Lbs. Code word TENSF.....

Hollow Ground Blades

Ideal for fine and accurate work. The teeth have no set, and the work comes from the saw ready to put together. Intended for fine work only; it is not suitable for rough cutting.

- No. 1016 10" Hollow-Ground Blade, for No. 1160 or 1450 Saw. $\frac{5}{8}$ " hole.....
Shipping weight 2 Lbs. Code word TENSR.

Dado Head and Inserts

For cutting of grooves varying in width from $\frac{1}{8}$ " to $\frac{13}{16}$ " and up to $1\frac{1}{4}$ " deep, either with or across the grain. Made of the finest steel, carefully hardened and tempered. Includes $\frac{1}{16}$ " special inside cutter. Fits 860, 20 200, 1160 and 1450 saws.

- No. 333 6" Dado Head, consisting of two outer blades, $\frac{1}{8}$ " thick, two inside cutters $\frac{1}{8}$ " thick, one inside cutter $\frac{1}{4}$ " thick and one $\frac{1}{16}$ " thick. To cut grooves from $\frac{1}{8}$ " to $\frac{13}{16}$ ", advancing by $\frac{1}{16}$ ". With $\frac{5}{8}$ " holes to fit No. 860, 20 200, 1160 and 1450 Circular Saw. Shipping weight $3\frac{1}{2}$ Lbs. Code Word EICDA

- No. 1161 Insert for No. 1160 Saw. Ship. Wt. $1\frac{1}{2}$ Lbs. Code Word TENSF

- No. 1452 Insert for No. 1450 Saw. Ship. Wt. $1\frac{1}{4}$ Lbs. Code Word TILTC

- No. 20 827 Insert No. 20 200 Saw. Ship. Wt. $1\frac{1}{2}$ Lbs. Code Wd. SAWAG

Abrasive Cutting Wheels for Metal, Tile, Brick, Etc.

Abrasive Cutting Wheels will cut freely and fast all of the materials listed below, and many other materials. All are $\frac{3}{32}$ " thick, 8" diameter, and have $\frac{5}{8}$ " arbor hole only. Bonded with genuine synthetic resin; should not be confounded with shellac-bond wheels.

- No. 223 8" Cutting Wheel, $\frac{3}{32}$ " thick, $\frac{5}{8}$ " hole, for cutting vitrified brick, cast iron, sand cores, slate and plain or glazed tile.....
Shipping weight $1\frac{1}{2}$ Lbs. Code word BAKEC.

- No. 225 8" Cutting Wheel, $\frac{3}{32}$ " thick, $\frac{5}{8}$ " hole, for cutting monel metal, steel tubing hardened steel, stellite, stainless steel, aluminum tubes, etc.....
Shipping weight $1\frac{1}{2}$ Lbs. Code word BAKED.

- No. 227 8" Cutting Wheel, $\frac{3}{32}$ " thick, $\frac{5}{8}$ " hole, for cutting porcelain, hard rubber, brass tubing, copper, brass and bronze.....
Shipping weight $1\frac{1}{2}$ Lbs. Code word BAKEF.

- No. 228 8" Cutting Wheel, $\frac{3}{32}$ " thick, $\frac{5}{8}$ " hole, for cutting soft steel and wrought iron.....
Shipping weight $1\frac{1}{2}$ Lbs. Code word BAKEH.

See page 18 for listing of 10" abrasive wheels.

Approved Guards for No. 1160 Saw (Photo A)

These Circular-Saw Guards (U. S. Pat. No. 2,007,877) have been praised by all authorities as the only guards that really protect the saw user, while at the same time they do not interfere with his work. No other guards that we know of offer all the features of these, which meet the very exacting requirements of many Industrial Commissions. The basket pivots as shown by photos B and C, so that the work is covered at all times, while affording a clear view of the cutting line. The basket support swings on the arm to accommodate work of any thickness within the capacity of the saw.

- No. 1165 Swing Guard for No. 1160 Circular Saw, Photo A, with bracket support arm, pivot bracket, basket, collars and screws.....
Shipping weight 19 lb. Code word TENSK.

A Splitter To Suit the Saw Kerf

The splitter shown, Photo D, is the only practical type. It comes in three thicknesses to suit saws of different sets. It may be used either with or without the basket, and it floats to accommodate itself to the kerf.

"Anti-Kickback" Adjusts Itself To Work

The new "Anti-Kickback" attachment, Photos D and E, an integral part of the splitter for the 10" saw, prevents the work being kicked back against the operator if the kerf pinches on the saw blade. It is invaluable when sawing poorly seasoned or warped wood. The kickback fingers take all work from the thinnest strips up to the full capacity of the blades, and adjust themselves to the work without any attention on the part of the operator.

- No. 1166 Splitter Attachment, Photo D, for No. 1160 Circular Saw, consisting of three splitters, anti-kickback and collars for support arm.....
Shipping weight 5 Lbs. Code word, TENSF.

Abrasive Wheel Guards for Nos. 1160 and 1450 Saws

- No. 1470 Bent Arm and Bracket to fit No. 1155 Abrasive Wheel Guard to No. 1450 Saw. Shipping weight 15 Lbs. Code Word TILGA.....

- No. 1156 Bent Arm and Bracket to fit No. 1155 Abrasive Wheel Guard to No. 1160 Saw.....
Shipping weight 13 Lbs. Code word TENGB.

- No. 1155 Abrasive Wheel Guard, cast for No. 1160 Saw or No. 1450 Saw, less arm and bracket.....
Shipping weight 10 lbs. Code Word TENGA.

(FOR PRICES SEE ATTACHED PRICE LIST)

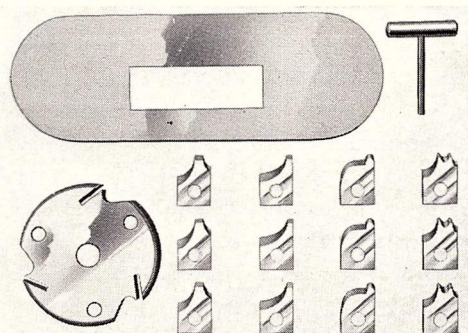
THE DELTA MANUFACTURING COMPANY • MILWAUKEE, WIS.

Low Cost Attachment Makes Hundreds of Mouldings on Circular Saw

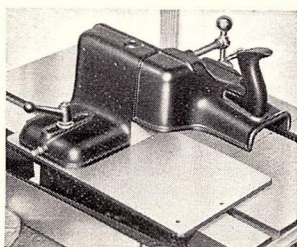
DOES MARVELOUS WORK—This unique attachment is the only practical tool of its kind. It consists of a strong, well-designed head, which may be had either in light-duty or heavy-duty types. A set of three interchangeable knives is locked into the head so that they are completely safe in operation. The head may be used either on the 860, 20 200, 1160 or 1450 Circular Saw, or on most other saws provided with a double-face fence.

A perfect moulding may be produced with one pass over the knives, or, if the cut is a deep one, in two or more passes. The attachment is such a practical one that it is used in hundreds of production shops, yet it is priced within the reach of every small shop.

There is nothing to get out of order in this tool, and it is extremely safe in operation because only the actual cutting edges of the knives are exposed and even this is covered when the work is being run. Enthusiastic users tell us that it makes their saws into first-class moulding machines!



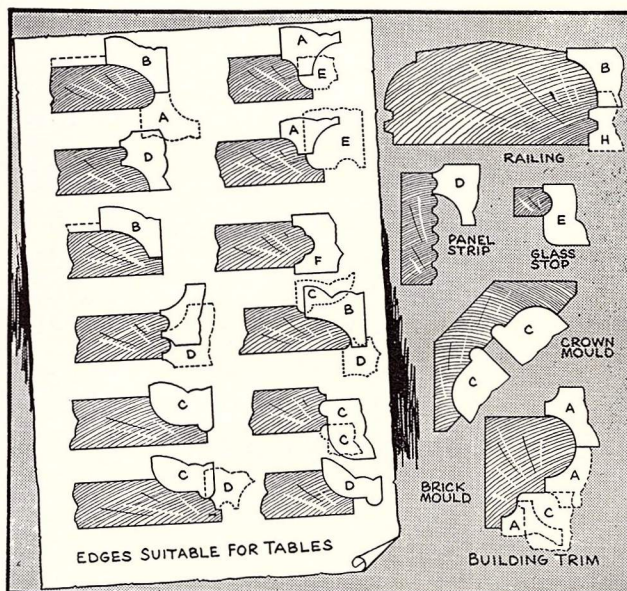
- No. 1158 Heavy Duty Moulding Cutter Set for the No. 1160 circular saw with heavy-duty steel cutterhead, four sets of high speed knives, style A, B, C, and D, oval table insert, wrench. Shipping weight 10 lb. Code word MOUHM.
 - No. 1458 Heavy Duty Moulding Cutter Set for the No. 1450 circular saw with heavy-duty steel cutterhead, four sets of high speed knives style A, B, C, and D, oval table insert, wrench. Shipping weight 10 lb. Code word TILTJ.
 - No. 20 836 Heavy Duty Moulding Cutter Set for No. 20 200 circular saw with heavy duty steel cutterhead, four sets of knives. Style A, B, C, and D, oval table insert, wrench. Shipping weight 10 lb. Code word SAWAL.
 - No. 267 Heavy Duty Moulding Cutter Set for other makes of circular saws with arbor up to 7/8" diameter. Price includes boring up to 3/8", 3/4", or 7/8" diameter. Consists of Heavy-Duty steel cutterhead, four sets of high speed knives, style A, B, C and D, wrench. Without oval table insert. Specify bore wanted. Shipping weight 5 lbs. Code word MOUHK.
 - No. 265 Heavy Duty solid steel head only, to fit 5/8" arbor. Without wrench or cutter. Not furnished in 1/2" bore. Shipping weight 3 lbs. Code word MOUST.
 - No. 1162 Moulding cutter table insert for 1160 saw. Shipping weight 1 1/2 lb. Code word TENG.
 - No. 1453 Moulding cutter table insert for 1450 saw. Shipping weight 1 1/2 lbs. Code word TILTD.
 - No. 20 828 Moulding Cutter Table Insert for 20 200 saw. Shipping weight 1 1/2 lbs. Code word SAWAH.
 - No. 1521 Wrench. Shipping weight 6 ozs. Code word WRENB.
 - No. 245 Spacer. Shipping weight 6 ozs. Code word COLLA.
- Heads have 3/8" Bore. Extra for 3/4" or 7/8".....
Wood Facings are used on standard fence of the saw when moulding cutter is used.



Tenoner Makes All Cuts Safe, Square, Parallel

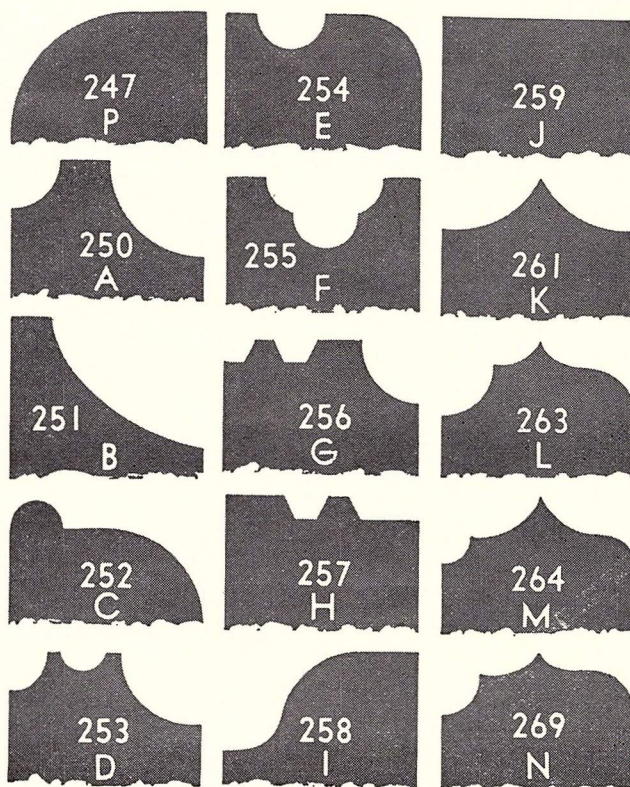
Work is fed to saw with one hand—far removed from the revolving blade. The attachment will take stock up to 2 3/4" thick, any width within the capacity of the saw, and tenons to 2" long on an 8" saw. With the use of No. 1171 spacing collars and an extra saw blade, 1/4" or 3/8" tenons can be cut at one pass.

- No. 1172 Tenoner complete with base plate as shown. Shipping weight 31 lbs. Code word TENBP.
- No. 1170 Tenoner for use with the No. 1186 Sliding jig. Shipping weight 21 lbs. Code word TENJG.
- No. 1171 Spacing collar set (one 1/4" and one 3/8" collar). Shipping weight 10 ozs. Code word TENCO.



Extra Sets of Cutter Blades

Cutters come in sets of three matched blades. Being made of high-speed steel (not carbon steel) they will cut thousands of feet of moulding before dulling. All these knives may be used with shaper cutter head No. 1343 listed on page 45. Blades shown actual size.

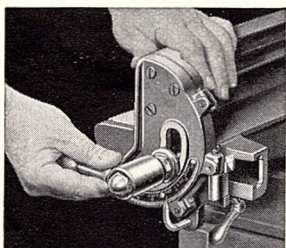
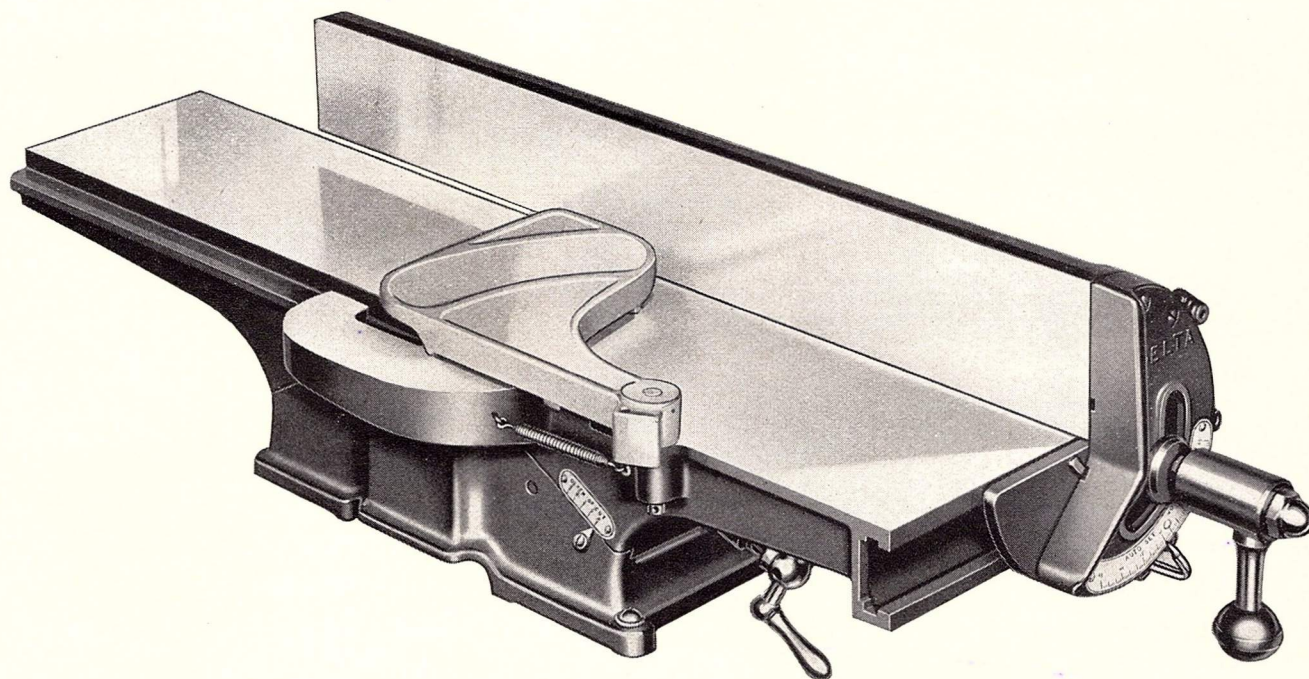


No.	Description	Code	Price Set	No.	Description	Code	Price Set
247	Cove	MOULP		258	O-G Curve	MOULI	
250	Bead	MOULA		259	Straight	MOULJ	
251	Bead	MOULB		261	Flute Bead	MOULK	
252	Crown Mould	MOULC		263	Flute & Cove		
253	Panel Strip	MOULD			Comb.	MOULL	
254	Glass Stop	MOULE		264	Flute & Cove		
255	Screen Mould	MOULF			Comb.	MOULM	
256	Drawer Joint	MOULG		269	Flute & Cove		
257	Glue Joint	MOULH			Comb.	MOULN	

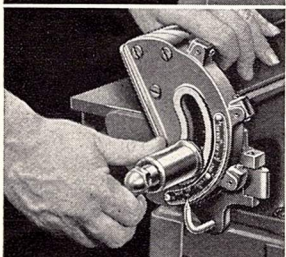
(FOR PRICES SEE ATTACHED PRICE LIST)

THE DELTA MANUFACTURING COMPANY • MILWAUKEE, WIS.

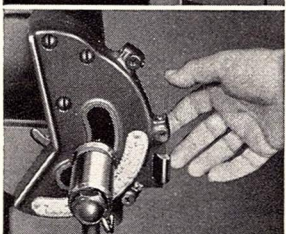
FINEST VALUE EVER OFFERED IN A 6" JOINTER



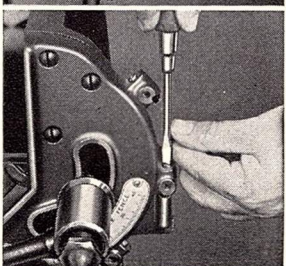
When the dual-control handle is slid out it engages the bracket lock nut, which when loosened (by a twist of the wrist), frees the entire fence so that it can be moved across the table to any position desired. Tightening the nut, clamps the fence firmly and accurately in position.



When the dual-control handle is slid in it engages the tilting lock nut. A twist of the nut loosens the quadrant so that the fence may be tilted to any angle desired. Tightening the nut locks the fence. When the handle is not engaged it swings free, out of the way.



A touch of the finger moves the patented stop links into or out of engagement with the individually adjustable stop set screws enabling the fence to be accurately stopped at 45, 90 or 135 degrees. The fence can be set accurately for other angles by means of large tilt scales.



To insure absolute accuracy when tilting the fence the stop screws are individually adjustable. This is another patented feature which makes the jointer the favorite of the real craftsman and insures that once the stops are set, the fence will always return to its setting.

NOTE the massive construction of this 6-Inch Jointer. See the heavy, well ribbed base, which holds the tables in perfect alignment. Note the extremely rigid fence—a fence which cannot possibly spring sidewise as work is fed through. Note the heavy construction of the fence bracket and slide. You will then understand why this jointer produces such accurate work.

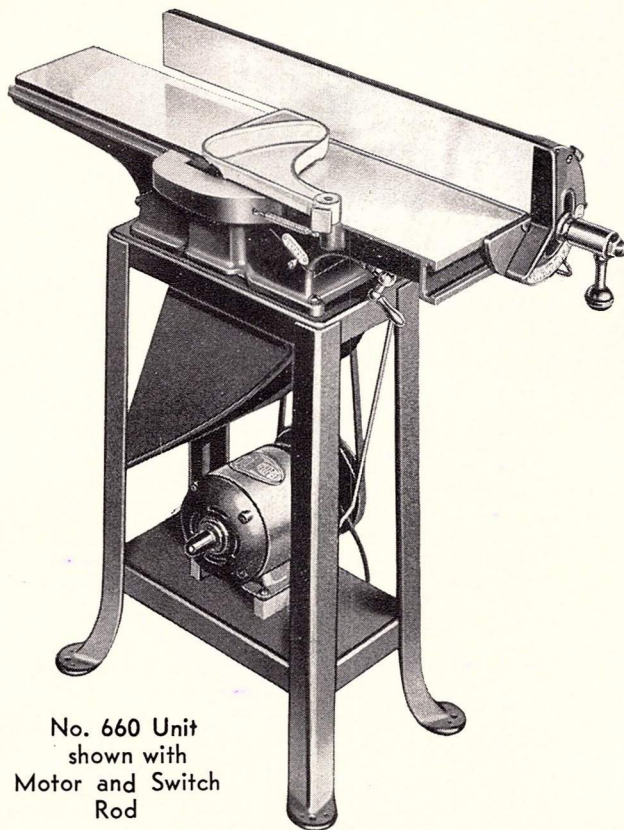
Careful machining, in addition to massive design, aids in producing precision work. The tables are not only ground flat and true individually, but, after assembly, they are ground at the same time on a larger grinder—no chance of any lack of alignment.

The fence tilts on our patented bracket, insuring sure, free action, and unvarying accuracy of the stop settings—something very difficult to achieve in machines without our principle. The swinging stop, with its individually adjustable stop screws at the 45, 90 and 135-degree positions, insures that, once the stop screws are accurately set, the double-tilting fence will invariably return to the same accurate setting after tilting. Once set, the fence is always set for these most frequently used positions.

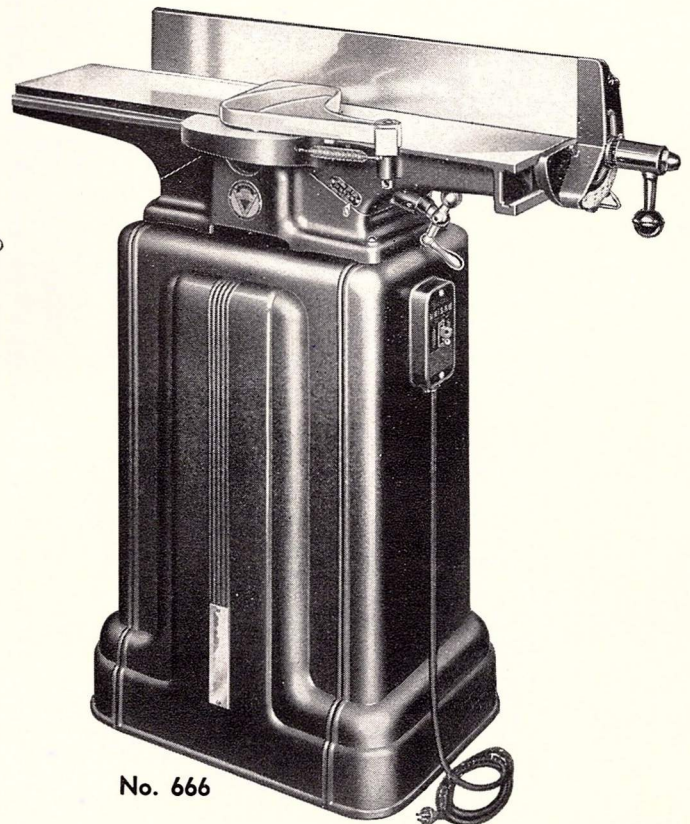
And the dual-control handle: Slid in, it engages the tilting lock and a twist of the wrist tilts the fence. Slid out, it engages the bracket lock, enabling the whole fence to be moved across the table. In the center, it swings free, completely out of the way of the operator.

Guard for rear knives available when rabbeting—an absolute necessity in the school shop. With the two knife guards and the belt guard this is the safest machine available for school and production work.

Six-Inch Jointers on Stands — Efficient and Low Cost Production Units



No. 660 Unit
shown with
Motor and Switch
Rod



No. 666

STEEL STAND is an added convenience. Brings jointer to correct height, makes it completely portable. Heavy built-in steel chute carries off shavings.

CAST IRON STAND is extremely rugged—fully encloses motor, belt. Is easy to keep clean—built-in chute carries off shavings. Rear panel removable, allowing easy access to motor.

Cat. No.

Price

- 654 6" Jointer with 3 High-Speed Steel Knives, 2-Way Fence and Dual Control, 2 3/4" Arbor Pulley and Front Safety Guard. 119 lbs. SIXJO
- 656 Steel Stand, Top: 8" x 15 7/8", 29 1/2" High. 34 lbs. SIXST
- 661 Belt Guard for Use with Steel Stand. 33 lbs. SIXGA
- 662 Rear Knife Guard with Spring. 2 lbs. SIXRE
- 560 V-Belt, 56 7/8" Ins. Cir. 58 1/2" Out. Cir. 1 lb. EICVB
- 5700 7" Motor Pulley, Specify 1/2" Bore. 2 lbs. PULOL
- 660-C Complete Jointer Unit Consisting of All of the Above on Steel Stand without Motor or Switch Rod. 192 lbs. SIXJS
- 660 Same as 660-C but without Belt Guard, Rear Knife Guard, Motor or Switch Rod. 153 lbs. SIXUN
- 666-C Same as 660-C but with 667 Cast Iron Stand in Place of 656 Steel Stand and 661 Belt Guard. Without Motor or Switch. 273 lbs. SIXJI
- 666 Same as 666-C but without Belt Guard, Rear Knife Guard, Motor or Switch. 234 lbs. SIXCB
- 667 Cast Iron Stand with Motor Plate and Belt Guard. 115 lbs. SIXCC
- 659 Set of 3 High-Speed Steel Knives. 1/2 lb. SIXKI
- 132 Switch Box, Power Cord and Plug and Motor Lead Wire, for All Single Phase Motors. Used only on 667 Cast Iron Stand. 1 1/2 lbs. SPESB
- 663 Cutter Head for No. 654 Jointer with knives and bearings. 10 lbs. SIXCU
- 1522 Double end 1 1/8" open wrench for knife screws. 1/8 lb. WRENC
- 302 Set of three knives for No. 290 4 inch jointer. 1/2 lb. JOIKI

MOTORS RECOMMENDED

- | | | | |
|--------------|--------|----------|---------------------------------|
| LIGHT DUTY: | 62 110 | 1/8 H.P. | Cap. A.C. 110/220 V. 60 Cy. |
| | 66 110 | 1/8 H.P. | 3 Ph. A.C. 220 V. 50/60 Cy. |
| | 68 110 | 1/8 H.P. | D.C. 115 V. |
| MEDIUM DUTY: | 62 110 | 1/4 H.P. | Cap. A.C. 110/220 V. 60 Cy. |
| | 66 320 | 1/2 H.P. | 3 Ph. A.C. 220/440 V. 50/60 Cy. |
| | 68 110 | 1/4 H.P. | D.C. 115 V. |
| HEAVY DUTY: | 64 510 | 1/2 H.P. | R.I. A.C. 110/220 60 Cy. |
| | 66 320 | 1/2 H.P. | 3 Ph. A.C. 220/440 50/60 Cy. |
| | 68 510 | 1/2 H.P. | D.C. 115 V. |

For 3 Ph. Motors use No. 1320 or No. 1329 3 Ph. Manual Starters and 1322 Mounting Parts.

Use No. 1334 Switch Rod for Single Phase Motors.

See Pages 53 to 55 for Motors and Switches.

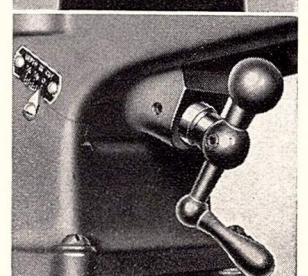
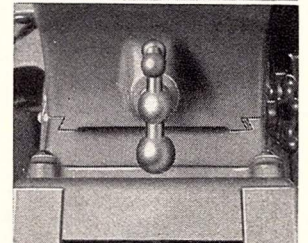
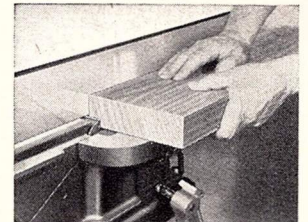
These Patented Features Insure Accuracy—Long Life—Convenience

Shown here and on opposite page also—For all jointers.

Rabbet cuts a full 1/2" deep can be cut at one pass of the work. The guard is instantly removed for rabbeting and as quickly replaced. Front and rear flap guards for knives may be locked to prevent unauthorized removal—an important feature.

View of the underside of the table showing the rigid construction of the husky base casting and the dovetailed ways on which the tables move. Notice the gib at the right permits adjustment for wear which means this jointer will always be accurate.

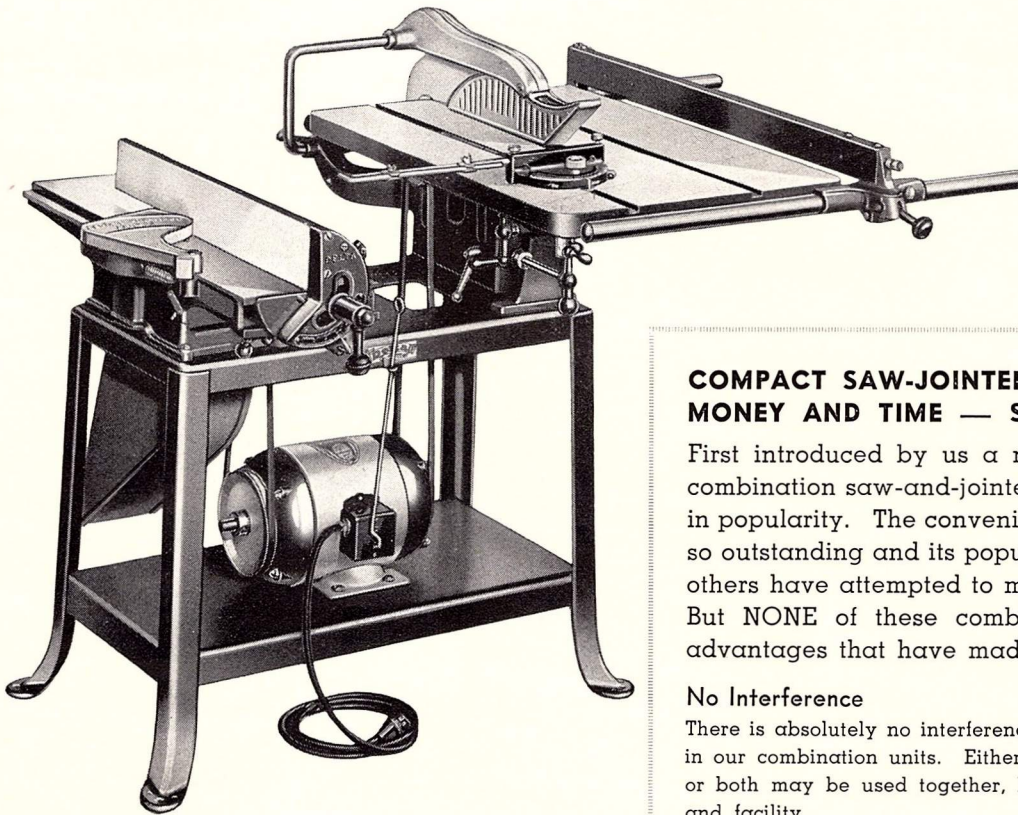
The convenient ball-crank handle allows front table to be raised and lowered in a jiffy. Plenty of room means no skinned knuckles. The scale at the side shows depth of cut which is a maximum of 1/2" on the 6" jointer—ample capacity for all work.



(FOR PRICES SEE ATTACHED PRICE LIST)

THE DELTA MANUFACTURING COMPANY • MILWAUKEE, WIS.

SAW-JOINTER COMBINATION UNITS OFFER MANY ADVANTAGES



10" SAW, 6" JOINTER UNIT ILLUSTRATED ABOVE

This unit is made up of the 10" saw described on page 30 and the 6" jointer described on page 36.

Cat. No. Price

- 1164 Combination Saw-Jointer Unit Consisting of 1160 10" Circular Saw, 654 6" Jointer, 1168 Steel Stand, 560 V-Belt for Saw, 510 V-Belt for Jointer, 5500 5" Pulley for Saw 3/4" Bore, 5700 7" Pulley for Jointer 3/4" Bore. Without Motor or Switch Rod. 389 lbs. TENS1
- 1165 Swing Guard for Saw Complete (see page 30). 19 lbs. TENSK
- 1166 Splitter Attachment (see page 30). 5 lbs. TENS1
- 1176 Belt Guard for Circular Saw. 12 lbs. TENS1
- 1177 Belt Guard for Jointer. 11 lbs. TENS1
- 662 Rear Knife Guard for Jointer. 2 lbs. SIXRE
- 1164-C Complete Combination Unit Consisting of All of the Above. Without Motor or Switch Rod. 438 lbs. TENS1
- 865 Miter Gage Clamp Attachment. (See page 31). 2 1/2 lbs. NECLA
- 1168 Steel Stand, Top: 16" x 30", 26 3/4" High. 80 lbs. TENSO...

8" SAW, 6" JOINTER UNIT, NOT ILLUSTRATED

This unit is made up of the 8" saw described on page 32 and the 6" jointer described on page 36.

- 22 580 Combination Unit consisting of No. 20 200 8" Circular Saw, No. 654 6" Jointer, No. 1168 Steel Stand with Chute, No. 5700 Pulley, No. 5500 Pulley, No. 510 V-Belt and No. 30 136 V-Belt, without motor or switch rod. COMBH....
- 20 829 Swing Guard for Saw, complete (see page 32). SAWAJ
- 20 830 Splitter Attachment (see page 32). SAWAJ
- 662 Rear Knife Guard for Jointer. 2 lbs. SIXRE
- 22-560-C Complete Combination Unit consisting of all of the above. Without motor or switch rod. COMBJ....

MOTORS RECOMMENDED

- LIGHT DUTY: 64 510 1/2 H.P. R.I. A.C. 110/220 V. 60 Cy.
66 720 3/4 H.P. 3 Ph. A.C. 220/440 V. 50/60 Cy.
68 510 1/2 H.P. D.C. 115 V.
- MEDIUM DUTY: 64 710 3/4 H.P. R.I. A.C. 110/220 V. 60 Cy.
66 920 1 H.P. 3 Ph. A.C. 220/440 V. 50/60 Cy.
68 710 3/4 H.P. D.C. 115 V.
- HEAVY DUTY: 64 910 1 H.P. R.I. A.C. 110/220 V. 60 Cy.
68 910 1 H.P. D.C. 115 V.

Use No. 1320 or No. 1329 3 Ph. Starters and 1322 Mounting Parts.
Use No. 1334 Switch Rod for Single Phase Motors.
See Pages 53 to 55 for Motors and Switch Parts.

(FOR PRICES SEE ATTACHED PRICE LIST)

COMPACT SAW-JOINTER UNITS SAVE SPACE—MONEY AND TIME — SPEED UP PRODUCTION

First introduced by us a number of years ago, the combination saw-and-jointer unit has steadily gained in popularity. The convenience of this combination is so outstanding and its popularity is now so great that others have attempted to make similar combinations. But NONE of these combinations combine all the advantages that have made ours such a favorite.

No Interference

There is absolutely no interference between the saw and jointer in our combination units. Either machine may be used singly, or both may be used together, by one man or two, with ease and facility.

Space-Saving

Both machines in our combinations are driven from below BY THE SAME MOTOR. In some other combination units the motor or motors must be mounted behind the machines, which makes a large, awkward stand necessary. This not only reduces portability, but also wastes shop space.

Low Power Cost

Since both machines are driven from the same motor, not only is the cost of an additional motor saved, but the running cost is generally lower than with two separate motors.

Portability

In spite of their large capacity, our combination units are so compact that they are used as portable power units for many outside jobs, as well as being used anywhere in the shop where they will best suit the job. Many contractors load them on a truck and take them right to the job. They are more portable than most old-fashioned "saw rigs", although of larger capacity.

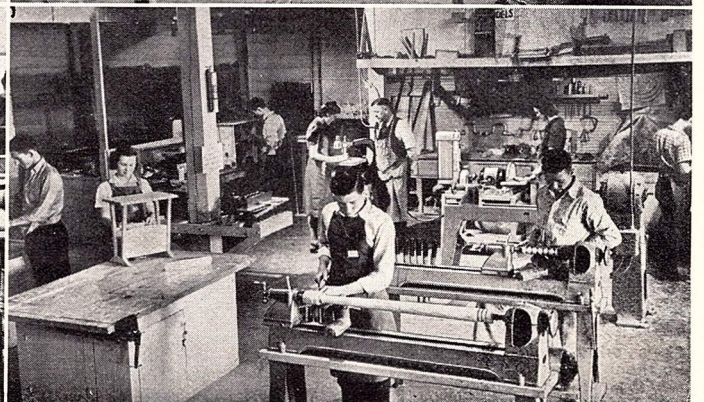
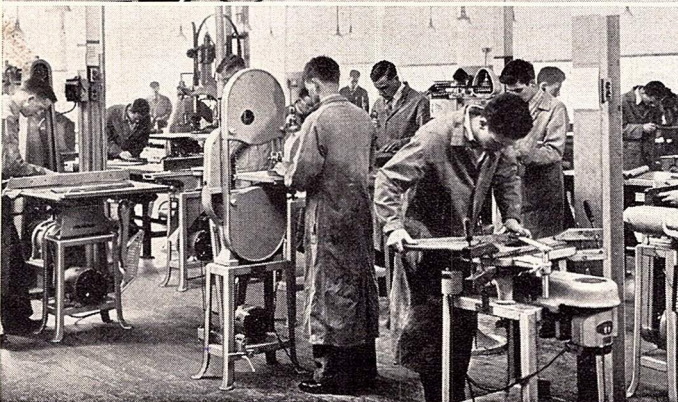
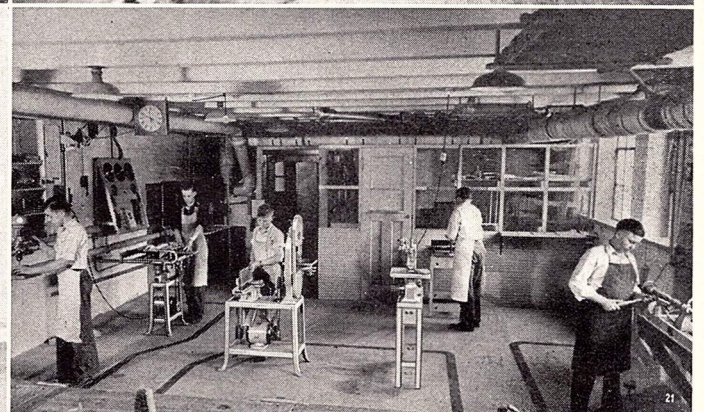
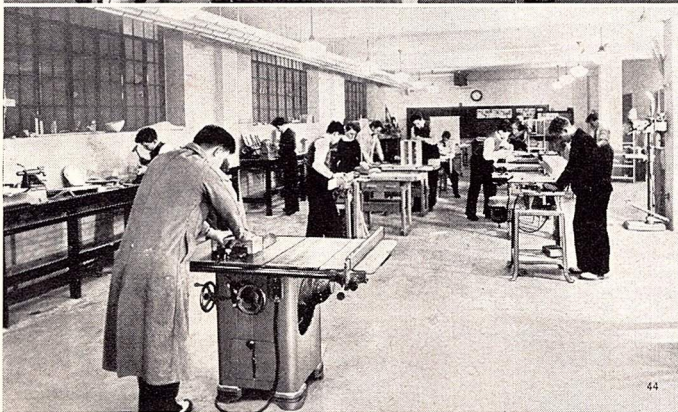
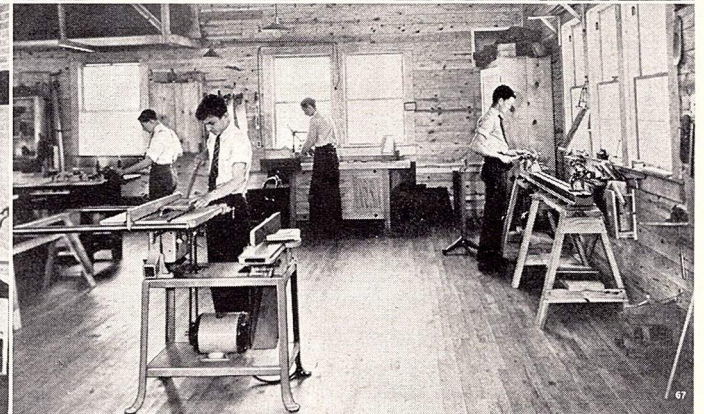
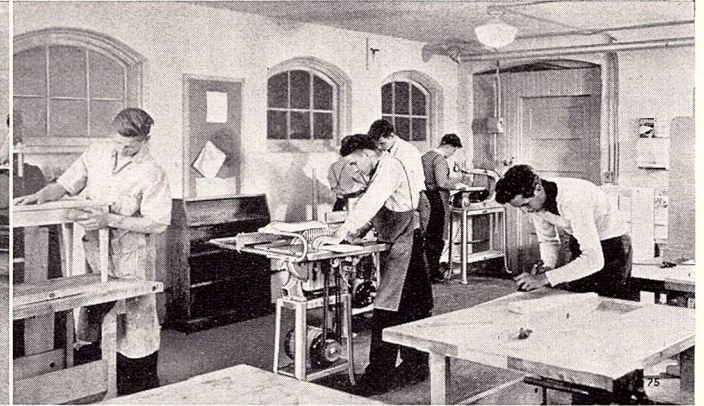
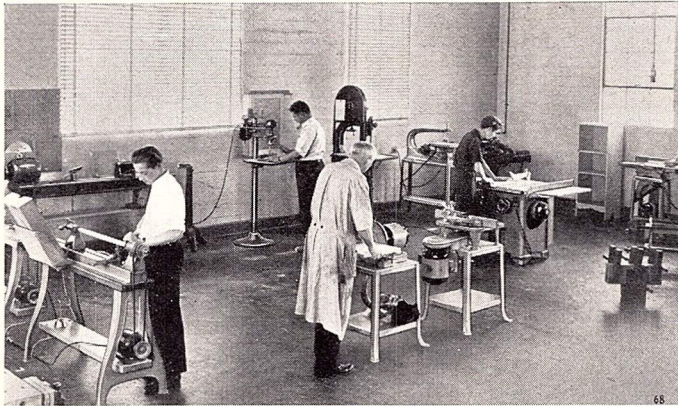
Maximum Efficiency

The extreme handiness of being able to rip stock to width and then joint it without moving more than a step must be experienced to be appreciated. Users who own these combination units claim that they can perform 80% of all common wood-working operations on their machines, and at savings of from 20% to 50% in time. You must use one of our combination units to understand why they are so popular!

This is the ideal machine for the contractor, for the novelty or furniture shop, for the small cabinet shop—in fact, in practically any type of woodworking shop it will take the place of machines consuming much more power and with but a fraction of its versatility. Hundreds of installations all over the world testify to its practicality and value.

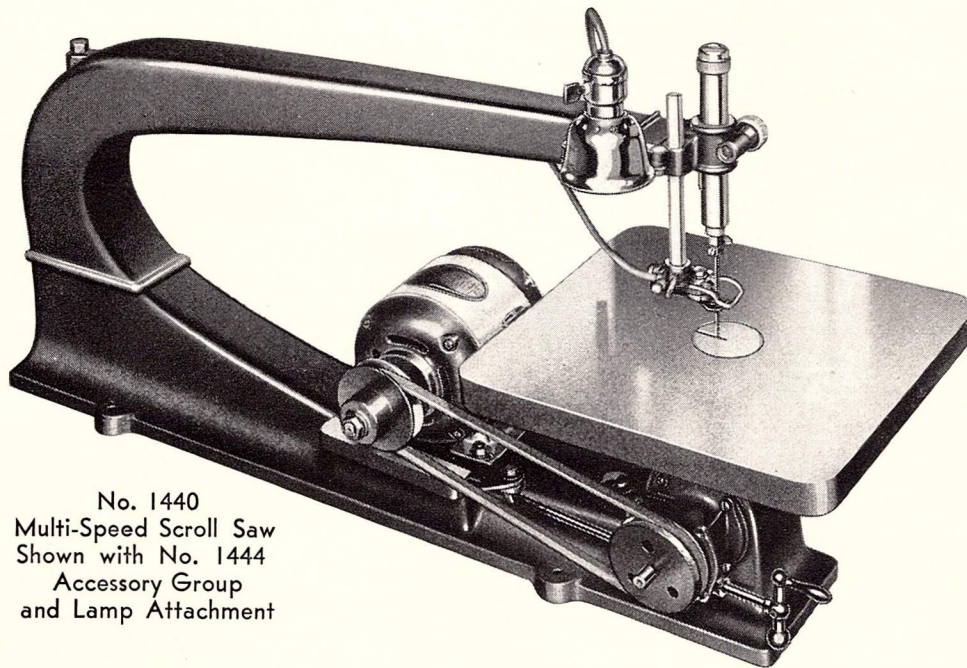
THE DELTA MANUFACTURING COMPANY • MILWAUKEE, WIS.

**SCHOOLS FIND DELTA MACHINES IDEAL BECAUSE OF
THEIR LOW COST AND MAINTENANCE, THEIR ACCURACY AND
LONG LIFE, THEIR COMPLETE SAFETY AND BIG CAPACITY**

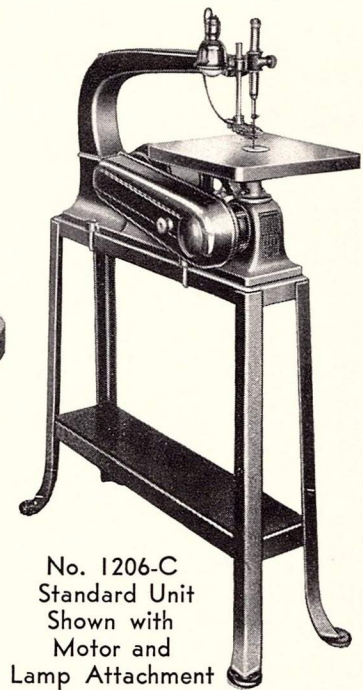


THE DELTA MANUFACTURING COMPANY • MILWAUKEE, WIS.

THESE STURDY SCROLL SAWS ARE FAST AND ACCURATE



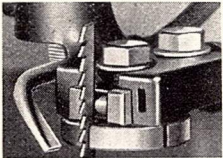
No. 1440
Multi-Speed Scroll Saw
Shown with No. 1444
Accessory Group
and Lamp Attachment



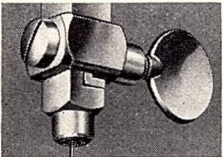
No. 1206-C
Standard Unit
Shown with
Motor and
Lamp Attachment



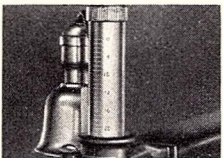
Lower chuck of steel.



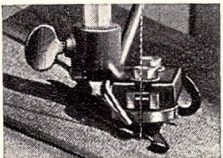
Highly efficient guide.



Self-centering chuck jaw.



Tension of spring can be adjusted.



The spring hold-down functions even when the table is tilted; an important feature.

These Features Insure Long Life, Better Performance, Faster Output

EXPERIENCED scroll saw users know that there are several features essential in a good scroll saw. It must be capable of using all types of blades—it must operate with minimum blade breakage—a minimum of vibration at all speeds and must have a selection of speeds for various types of work.

The patented chucks in our scroll saws are completely universal, taking jeweler's blades, pin blades, saber blades, round shank files up to 1/4"—without any extras. Operation is smooth and free—the blade is properly guided eliminating blade breakage.

The heavy cast table not only tilts to the right and left, but by rotating the table bracket 90 degrees and the chucks so that the blade cuts sideways, the table tilts to the front to cut stock of any length.

Timken-bearing crankshaft . . . shaft-driven blower pump which makes air available even for saber blades . . . universal tilting table, tilting for sidewise cutting as well as for straight cuts . . . the finest completely universal blade guide made . . . high-speed blade support . . . adjustable blade tension . . . splash-lubricated drive . . . tilting spring hold-down . . . these are only a few of the things that make our 24" scroll saws the finest tools of their type.

This Scroll Saw is Available in Two Popular Models

THE MULTI-SPEED SCROLL SAW

A Thousand Speeds at the Touch of Your Finger—that's what you get with this perfected control of speed. Two or four speed saws have limited speed range—too slow for some materials—too fast for others. With the Multi-Speed Scroll Saw you can select ANY speed from 650 to 1700 R.P.M. controlling the speed within 1 or 2 R.P.M. if necessary. High speed for fast, fine work—low speed for heavy work—and ANY speed in between. Speed controlled by conveniently located ball crank.

THE STANDARD FOUR-SPEED SCROLL SAW

Operating at four well-selected speeds, this scroll saw has the same features as the Multi-speed saw shown above. The heavy, rigid over-arm—the heavy 14" x 14" finely finished cast iron table, the design of the chucks, blade support, guide and other features make this the best saw for all purposes. Speeds 650, 1000, 1300 and 1750 R. P. M.

Specifications of Both Saws

35" long, 14" wide, 43" high on stand, 14" x 14" cast iron table, belt guards available for both machines, capacity 1 3/4" thick, 24" reach.

THE DELTA MANUFACTURING COMPANY • MILWAUKEE, WIS.

Cat. No.	MULTI-SPEED SCROLL SAW	Price
1440	Multi-Speed Scroll Saw with 1 Saber Blade, 3 Jeweler's Blades, Puzzle Jaw for Upper Chuck. Without Light Attachment, Pulleys, Motor, Belt or Guard. 110 lbs. MULTA	
1444	Multi-Speed Accessory Group Consisting of 1446, 1447, 331 and 1443. 12 lbs. MULTC	
1442	Belt and Pulley Guard for 1440 only. 7 lbs. MULTC	
715	Self-Centering Chuck (see below). 5 oz. LACHU	
1204	Lower Saber Blade Guide (see below). 10 oz. LUXLS	
716	Steel Stand, Top: 7" x 33", 31½" High. 60 lbs. LASAS	
1445-C	Complete Multi-Speed Unit Consisting of All of the Above. Without Motor. 198 lbs. MULTL	
1445	Same as 1445-C but without Belt Guard, Self-Centering Chuck, Lower Saber Blade Guide and Motor. 182 lbs. MULTF	
1446	Variable Speed Motor Pulley ½" Bore. 2 lbs. MULTH	
1447	Motor Base with Bracket, Screw and Handle. 7 lbs. MULTI	
331	Special V-Belt for Variable Speed Pulley only. ½ lb. MULTG	
1443	Special Arbor Pulley, ½" Bore. 2½ lbs. MULTD	
882	Complete Lamp Attachment. 1½ lbs. LAMPA	

STANDARD FOUR-SPEED SCROLL SAW, Speeds of 650, 1000, 1300 and 1750 R.P.M.

1200	Four-Speed Scroll Saw with 1 Saber Blade, 3 Jeweler's Blades, 4-Speed Cone Pulley on Arbor, Puzzle Jaw for Upper Chuck. Without Light Attachment, Motor, Motor Pulley, Belt or Belt Guard. 110 lbs. LUXSA	
1207	Accessory Group Consisting of 718 and 340. 1¼ lbs. LUXAC	
1203	Belt and Pulley Guard for 1200 only. 17 lbs. LUXBG	
715	Self-Centering Chuck (see below). 5 oz. LACHU	
1204	Lower Saber Blade Guide (see below). 10 oz. LUXLS	
716	Steel Stand, Top: 7" x 33", 31½" High. 60 lbs. LASAS	
1206-C	Complete Four-Speed Unit Consisting of All of the Above. Without Motor. 195 lbs. LUXSC	
1206	Same as 1206-C but without Belt Guard, Self-Centering Chuck, Lower Saber Blade Guide and Motor. 170 lbs. LUXUN	
340	V-Belt 13" Centers. ½ lb. BELUX	
718	4-Speed Cone Pulley, ½" Bore. 1½ lbs. CONPA	
882	Complete Lamp Attachment. 1½ lbs. LAMPA	

MOTORS RECOMMENDED:

LIGHT AND	60 110	¼ H.P. Sp. Ph. A.C.	110 V. 60 Cy.
MEDIUM DUTY:	60 310	½ H.P. Sp. Ph. A.C.	110 V. 60 Cy.
	68 110	½ H.P. D.C.	115 V.
HEAVY DUTY:	60 310	½ H.P. Sp. Ph. A.C.	110 V. 60 Cy.
	66 110	¾ H.P. 3 Ph. A.C.	220 V. 50/60 Cy.
	68 110	¾ H.P. D.C.	115 V.

For 3 Ph. Motors use No. 1320 or No. 1329 3 Ph. Manual Starters and No. 1322 Mounting Parts. See Pages 53 to 55 for Motors and Switch Parts.

ADDITIONAL SCROLL SAW ACCESSORIES AND PARTS

Individual Guides

Are used in place of regular guide when following line is important. Set consists of 6 hardened-steel guides and one bracket.

No. 1202 Set of 6 guides and bracket for No. 1200 and 1440 Scroll Saws. Shipping Weight 18 oz. Code Word LUXGA.

Self-Centering Chuck

Fits lower chuck. Blades are automatically guided to center of chuck and locked securely with thumb screw. Saves time on interior cuts.

No. 715 Self-centering chuck for No. 1200 and No. 1440 Scroll Saws. Shipping Weight 5 oz. Code Word LACHU

Lower Saber Blade Guide

Supports saber blade directly beneath table. Enables perfect straight-line work when used in conjunction with upper guide.

No. 1204 Lower Saber Blade Guide with post, nut and thumbscrew for No. 1200 and No. 1440 scroll saw. Shipping weight 10 oz. Code Word LUXLS.

MACHINE FILES

¾ Inch Shank, Shipping Weight 4 Oz. Each	
726 Square, FILEA	
727 Crochet, FILEB	
728 ½ Round, FILEC	
729 Round, FILED	
730 3 Square, FILEE	
731 Pillar, FILEF	
740 Set of Above 6, FILEX	
Shipping Weight of 740 Set 8 Oz.	

Sanding Attachment

Half round sanding drum sands convex, concave, or flat surfaces. Saves hours of time. Knurled knob at top expands body and tightens garnet sleeve securely. 15/16" wide, ½" thick, 2½" long, ¼" shank. Fits lower chuck on 1200 and 1440 Scroll Saws.

No. 711 Sanding Attachment fits 24" Scroll Saw with 1 Sleeve. Ship. Wt. 8 oz. Code SANAT

No. 841 Garnet paper sleeves (medium) ½ dozen. Ship. Wgt. 6 oz. approx. Code Word SASLK.

No. 842 Garnet paper sleeves (fine) ½ dozen. Ship. Wgt. 8 oz. approx. Code Word SASLM.

Saber Blades for Wood

Made of best steel, accurately hardened and set. Are 5" long overall.

No. of Blade	Thickness and Width	Teeth Per In.	Code Word	Price Per ½ Doz.
703	.025" x .187"	9	SABLA	
704	.035" x .250"	7	SABLB	

Ship. Wt. Per Pkg. of Six Approximately 5 oz.



¾ Inch Shank, Shipping Weight, 3 Oz. Each	
751 Square, SAFIL	
752 Crochet, SAFIM	
753 ½ Round, SAFIN	
754 Round, SAFIO	
755 3 Square, SAFIP	
756 Pillar, SAFIR	
757 Lozenge, SAFIS	
758 Knife, SAFIT	
760 Set of above 8, SAFIV	
Shipping Weight of 760 Set 6 Oz.	

NEW Scroll-Saw Blades For All Types of Material

It has always been a problem to be sure that you were buying the right type of saw blade for the material you wanted to saw. Now, with this new complete listing you will find just the type of blade you want.

These blades are the finest obtainable, 5" long with accurately spaced teeth—properly set and hardened. Ends of blade have ⅝" blank for fastening into chuck.

Gross price applies only to lots of 1 gross or more of one kind of blade.

Cat. No. & Size	No. Teeth	Per Doz.	Per Gross	ACTUAL SIZE
No. 81 .010x.070	14			
No. 82 .010x.055	16			
No. 83 .010x.045	18			
No. 84 .008x.035	20			

Fret saw blades, wide spaced teeth approx. .010" thicker than above blades (not set). Tempered for sawing plastics, bone, celluloid, etc. Very fast in wood.

No. 85 .020x.055	15			
No. 86 .020x.065	12			
No. 87 .020x.070	7			
No. 88 .020x.110	7			

Jig saw blades, filed and set teeth, oil hardened and of medium temper for sawing wood and other substances—will also saw soft metals.

No. 91 .020x.110	15			
No. 92 .020x.110	10			
No. 93 .028x.187	10			
No. 94 .028x.250	7			

Piercing saw blade (not set) hardened and tempered for scroll sawing metals, bone, pearl, etc. Used most exclusively in fine metal arts. Will discolor wood at high speed because teeth are not set.

No. 95 .016x.054	30			
No. 96 .016x.054	20			
No. 97 .020x.070	15			
No. 98 .020x.085	12			

Scroll saw blades with set teeth hardened and tempered for sawing metals. Used extensively for sawing templates, light and heavy metal craft, electrotype metals, etc. Nos. 59, 60, and 61 also good wood cutters.

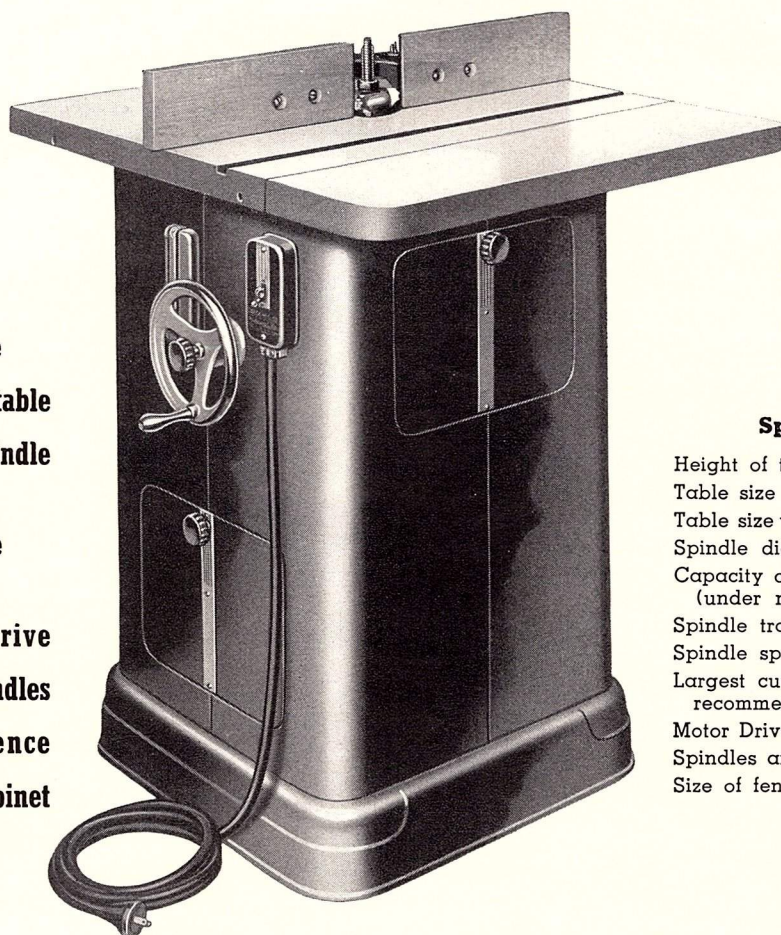
No. 58 .020x.070	32			
No. 59 .020x.070	20			
No. 60 .020x.070	15			
No. 61 .020x.085	15			
No. 64 .020x.110	20			
No. 65 Heavy Duty Hack saw blade .028x.025	20			

(FOR PRICES SEE ATTACHED PRICE LIST)

THE DELTA MANUFACTURING COMPANY • MILWAUKEE, WIS.

THIS SHAPER HAS THE FEATURES YOU WANT

1. Large husky spindle
2. Exceptionally big table
3. Long spindle and spindle travel
4. Large sealed-for-life ball bearings
5. Powerful V-belt drive
6. Interchangeable spindles
7. Fully adjustable fence
8. Strong, welded cabinet



Specifications:

Height of table from floor.....	34"
Table size	27"x28"
Table size with back wings.....	27"x36"
Spindle diameter	3/4"
Capacity of Spindle (under nut)	3 1/4"
Spindle travel	3"
Spindle speed	8500 R.P.M.
Largest cutting circle recommended	3 1/2"
Motor Drive up to 1 1/2 H.P., 3-phase	
Spindles are interchangeable	
Size of fence, each side:	3 3/4" x 12 3/8" x 15/16"

HERE is the machine you have been waiting for—the No. 1340 shaper built to the same exacting standards that characterize all our machines. Designed and built to handle heavy, fast cuts, it is ideal for the cabinet shop, furniture factory, specialty shop, sash and door company; as a matter of fact, any shop where accurate production shaping must be done at low cost.

Massive Table Correctly Designed

The big table 27"x28" can be increased to 27"x36" with the addition of a back wing. Bolting two shapers back to back gives you a two-spindle machine at a fraction of the cost you usually pay. Table will not warp or spring—has 3/8" x 3/4" groove for miter gage or jigs.

Spindle is Big and Husky

Spindle is 3/4"x3 1/4" under the nut with a full 3" travel. Carried in specially selected New-Departure sealed-for-life ball bearings which require no lubrication for their entire life. Spindle accurately ground—bearing seats are diamond-bored to three ten-thousandths, insuring absolute accuracy.

Spindles Are Interchangeable

Standard 3/4" diameter spindle may be easily replaced by 1/2" or 5/16" spindle using 3 lip formed cutters or

(FOR PRICES SEE ATTACHED PRICE LIST)

by 1/2" stub spindle for cope cutters. Spindle and bearings carried in easily replaceable cartridge which may be removed without disturbing the preload on the bearings.

Main Bearing Housing Is Massive

The heavy, ground tube which carries the large main bearing housing is held by a 3 point suspension in a manner to keep the spindle accurately square with the table. The entire assembly is a unit construction—spindle, housing, motor, raising and lowering mechanism AND THE TABLE are one self-contained unit.

Controls Are Convenient

Conveniently grouped, the controls are at front of machine. Spindle height indicator covers full 3" travel. Knob at center of hand wheel locks position.

Ring Guard Protects Operator

Fully adjustable and easily removed, this ring guard protects the operator and acts as a hold-down. May be purchased as an extra.

Fence Fully Adjustable

Each half of the large fence is fully adjustable and absolutely independent of the other half so that all types of adjustments may be readily and quickly made. The full advantages must be experienced to be appreciated.

THE DELTA MANUFACTURING COMPANY • MILWAUKEE, WIS.

Shaper Cutter Heads Are Safe:

Using blank knives which may be ground to suit the shape required, these Safety Cutter heads are carefully made and expertly designed so that the knives are firmly held and all vibration eliminated. See page 45.

Three-Lip Cutters Available in Wide Variety of Shapes to Meet All Needs

These 3-lip cutters are a new development in that they offer unlimited possibilities in hundreds of moulding shapes. Cope and reverse mouldings, sash mouldings, door mouldings, doors for cabinet work or buildings, brick moulds, base moulds, back mouldings are but a few of the applications where these versatile cutters may be used. See pages 45 and 46 for three lip cutters.

Strong, Sturdy Cabinet:

Modern, scientifically designed cabinet provides maximum strength with minimum weight. Fully encloses motor and mechanism from chips. Doors for getting at mechanism. Easily cleaned. Shaper heavy enough to "stay put," light enough to be moved to facilitate production.

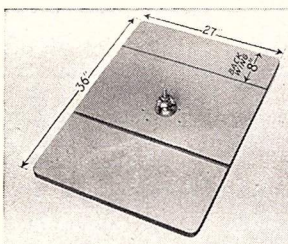
Cat. No.

Price

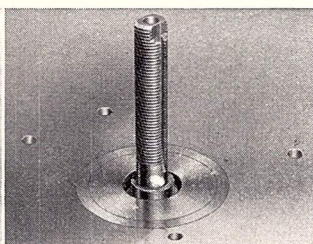
- 1340 Shaper with Fence, $\frac{3}{4}$ " Spindle, 27" x 28" Table, Table Insert Starting Pin, Wrenches and Spindle Pulley, without Belt, Motor Pulley, Motor, Reversing Switch or Cutters. 300 lbs. SHANA.
- 1345 Stub Spindle for 3 Lip Cutters with $\frac{1}{2}$ " Hole. 1 lb. SHANF...
- 1347 $\frac{1}{2}$ " Spindle for 3 Lip Cutters with $\frac{1}{2}$ " Hole. 1 lb. SHANH....
- 1348 Safety Ring Guard with Bracket, Hexagon Post, Spring Bar with Guard Ring and Screws. 8 lbs. SHANI.....
- 1349 Rear Extension Table 8" x 27". 32 lbs. SHANJ.....
- 287 V-Belt. 30" Out. Cir. $\frac{1}{2}$ lb. BELTG.....
- 5710 7"-Motor Pulley with Keyway for 3450 R.P.M. Motors, Specify Bore. 2 $\frac{1}{4}$ lbs. PULOR

1340-C Complete Shaper Consisting of all of the above without Motor, Switch or Cutters. 350 lbs. SHANN.....

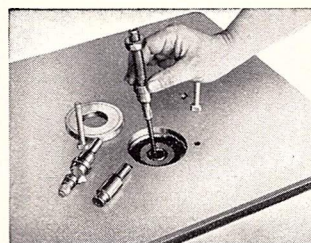
- 1346 $\frac{3}{8}$ " Spindle for 3 Lip Cutters with $\frac{3}{8}$ " Hole with Nut and Washer. 1 lb. SHANG



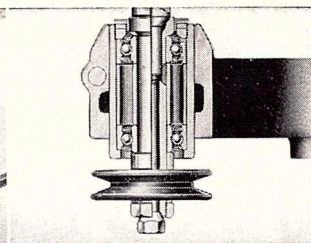
Large table 27" x 28" may be increased to 27" x 36" by addition of back wing. Bolting two shapers together produces a 2-spindle machine with a table 27" x 4'-8"



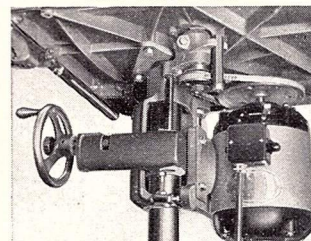
Exceptionally long $\frac{3}{4}$ " diameter spindle of manganese steel. Accurately ground with bearing seats diamond-bored to insure perfect accuracy.



spindles are readily interchangeable permitting use of wide variety of cutters and stub spindles for cope cuts on sash and doors. Note removable throat disc.



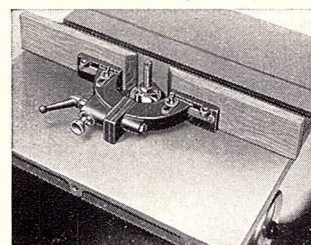
Spindle assembly shows rugged design, short, stiff drive spindle, closely spaced bearings, eliminates whip, produces chatterless work.



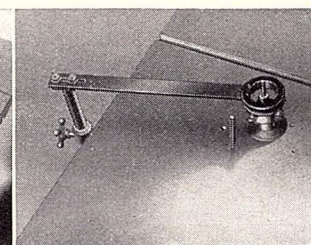
Entire mechanism is a unit assembled and bolted to bottom of table. Nothing to get out of alignment, insures true running.



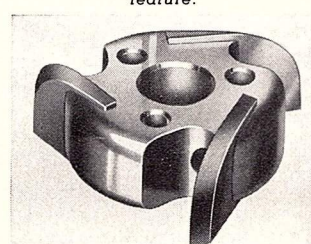
Convenient hand wheel adjusts spindle height. Lock knob in center. Adjustable scale plate shows height of spindle. All controls in one group.



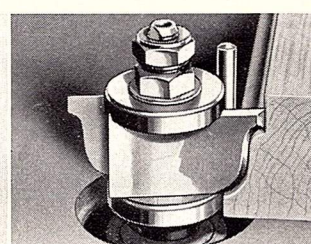
Fully adjustable fence with both halves independent of each other. Adjustable end-wise so opening may be small as possible — a good safety feature.



Ring guard not only protects operator from knives but also acts as a hold-down. Does not interfere with shaping operation. A fine accessory.



Three-knife safety cutter head, increases the use of your shaper. Uses circular saw moulding cutter knives listed on page 35.



Heavy duty Safety cutter heads hold ground knives firmly, produce chatterless work. All special shapes are easily and economically produced.

MOTORS FOR NO. 1340 SHAPER—3450 R.P.M.

Catalog No.	H.P.	Type	Rating	Ship. Wt. Lbs.	Code Word	Price	Cat. No. of Switches and Mounting Parts to Use		
							On and Off Switch	Mtg. Pts.	Reversing Switch
FOR LIGHT AND MEDIUM DUTY WORK— $\frac{1}{2}$ INCH FRAME— $\frac{3}{4}$ INCH SHAFT									
65 080	1	R.I.	110/220 V. 60 C.	85	EACCP		132		*
65 085	1	R.I.	110/220 V. 50 C.	85	EACCK		132		*
69 111	1	D.C.	115 V. D.C.	85	NDCUS		1320	1327	1325
69 121	1	D.C.	230 V. D.C.	85	NDCUU		1320	1327	1325
66 921	1	3 Ph.	220/440 V. 50/60 C.	66	NACKS		1320	1327	1325
FOR HEAVY DUTY WORK— $\frac{1}{2}$ INCH FRAME— $\frac{3}{4}$ INCH SHAFT									
67 121	1½	3 Ph.	220/440 V. 50/60 C.	85	EACDA		1320	1327	1325

*Reversing Switch built into motor.

IMPORTANT—Be sure to Order the Proper "On and Off" Switch and its Mounting Parts as Listed. If Reversing Action of the Shaper is Required, order the Proper Reversing Switch as listed.

(FOR PRICES SEE ATTACHED PRICE LIST)

No. 132 "On and Off" Switch consisting of Switch Box, Power Cord and Plug and Motor Lead Wire for Motors No. 8120 and 8820 Sh. Wt. 1 $\frac{1}{2}$ lbs., Code Word SPESE

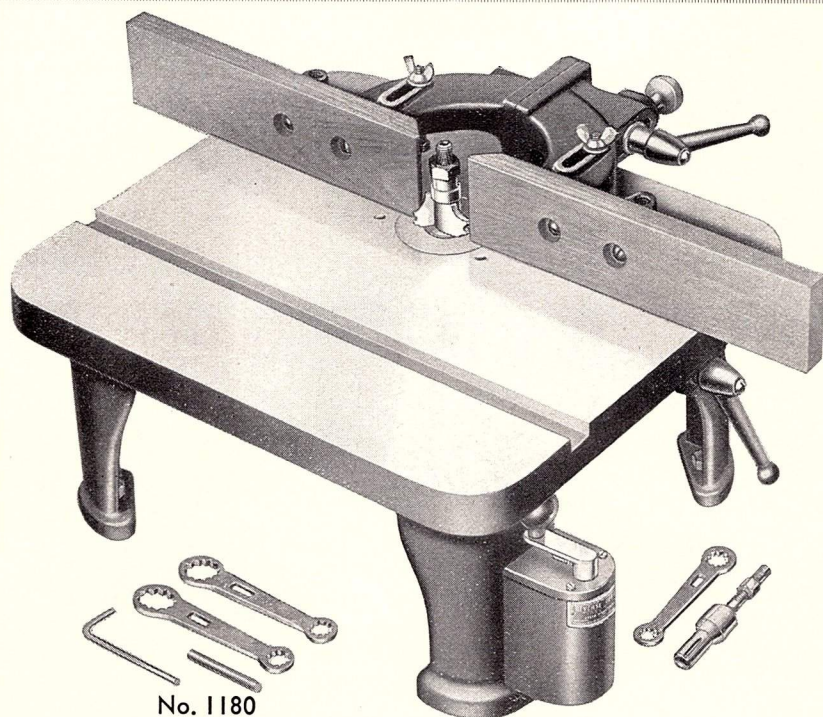
No. 1320 Three Phase "On and Off" Manual Starter for 3 Phase Motors. Specify Motor when ordering. Sh. Wt. 6 lbs. Code Word SWIPH

No. 1329 3 Ph. Magnetic Starter. 8 lbs. SWITD

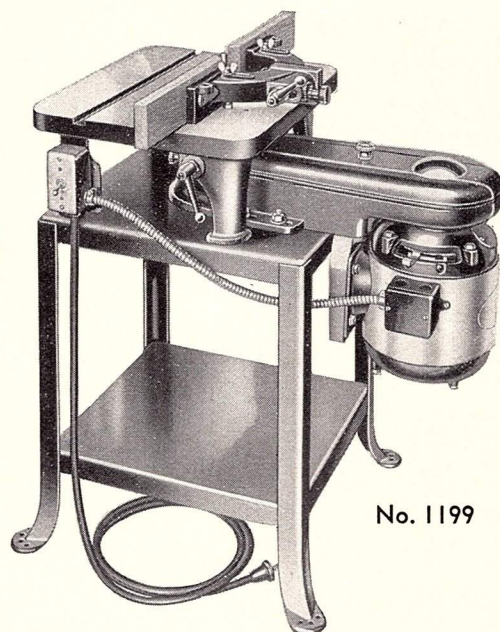
No. 1325 Reversing Drum Sw. (2 H.P. 440 V. Max.) for 3 Ph. or D.C. Motors (C-H 9441-H37). Sh. Wt. 4 lbs. Code Word SWITA..

No. 1327 Mtg. Parts for Mounting No. 1320 Starter only or the No. 1320 Starter with the No. 1325 Reversing Switch on the No. 1340 Shaper Cabinet. Sh. Wt. 2 lbs. Code Word SWITB

THIS SHAPER DOES AN ASTONISHING VARIETY OF WORK



No. 1180



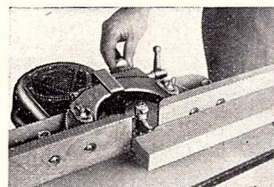
No. 1199

HUNDREDS of woodworking shops installed this shaper as an auxiliary to their larger shapers and find that an astonishing variety of work can be performed with it.

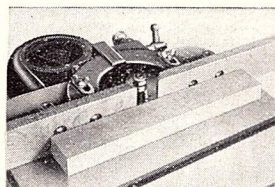
It will make hundreds of mouldings using either $\frac{1}{2}$ " hole or $\frac{5}{16}$ " hole cutters. It will shape, form or mould the edges of almost any form of work that can be handled on a larger shaper; it will handle all of the window, storm and screen sash work

of the average shop, and all of the cabinet work as well.

An outstanding feature of all our shapers is the fully adjustable fence. Where, on most shapers, the entire setting must be made over for each adjustment, on our shapers one half of the fence may be individually adjusted without disturbing the other settings. A simple, exact procedure instead of an awkward, inexact one. There is no "juggling"—no guesswork.



Fence adjustments are exact and simple to make. No "juggling"—no guesswork.



Both halves of fence adjustable through one control. Cutter opening also adjustable.



No. 987 Shaper Safety Guard for curved work protects operator from revolving cutters and acts as hold-down.

MOTORS FOR NO. 1180 SHAPER UNITS—3450 R.P.M.

Catalog No.	H.P.	Type	Rating	Ship. Wt. Lbs.	Code Word	Price	Cat. No. Switches and Mounting Parts to use		
							On and Off Switch	Mtg. Pts.	Rev. Sw.
FOR HEAVY DUTY WORK—8½ INCH FRAME—¾ INCH SHAFT									
65 080	1	R.I.	110/220 V., 60 C.	85	EACCP		134		*
65 085	1	R.I.	110/220 V., 50 C.	85	EACCK		134		*
66 921	1	3 Ph.	220/440 V., 50/60 C.	66	NACKS		1320	1322	1325
69 111	1	D.C.	115 V., D.C.	90	NDCUS		†		1116
69 121	1	D.C.	230 V., D.C.	90			†		1325

† With built-in reversing switch and separate on and off switch connected in conduit.

† On and off switch furnished with motor.

* Reversing switch built into motor.

IMPORTANT—Be Sure to Order the Proper "On and Off" Switch and its Mounting Parts as Listed in the Second Column.
If Reversing Action of the Shaper is required, order the proper Reversing Switch as Listed in the Third Column.

No. 134 "On and Off" Switch consisting of switch box, power cord and plug, motor lead wire and connectors. Ship. Wt. $1\frac{1}{2}$ lbs. Code Word SWITC.....

No. 1320 Three Phase "On and Off" Manual Starter for 3 Phase Motors. Specify Motor when ordering. Shipping Weight 6 lbs. Code Word—SWIPH.....

No. 1329 Magnetic Starter for 3 Phase Motors (Specify motor). 8 lbs. SWIDT.....

No. 1322 Mounting Parts for mounting No. 1320 or No. 1329 on Steel Stand of No. 1180 Shaper. Shipping Weight 2 lbs. Code Word SWIDR.....

No. 1116—Reversing Drum Switch. Shipping Weight 2 lbs. Code Word SWREV..

No. 1325 Reversing Drum Switch (2 H. P. 440 V. Max.) For 3 Phase or D. C. Motors (CH 9441-H 37). Shipping Weight 4 lbs. Code Word SWITA.....

(FOR PRICES SEE ATTACHED PRICE LIST)

Specifications

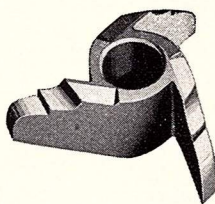
25" wide, $10\frac{1}{4}$ " high (bench model), $36\frac{7}{8}$ " high (floor model), $15\frac{1}{2}$ " front to back, fence 25" long, speed 10,000 R.P.M., $\frac{5}{16}$ " and $\frac{1}{2}$ " spindles. Double Seal Ball Bearings (require no lubrication), Spindle travel $\frac{3}{4}$ ", Spindle height lock. $\frac{3}{8}$ " x $\frac{3}{4}$ " table groove for sliding jig, tapered starting pin.

Cat. No.	Price
1180 Reversible Shaper with Fence, $\frac{5}{8}$ " and $\frac{1}{2}$ " Spindles, Table Insert, Starting Pin, Wrenches and Spindle Pulley, without Belt, Motor, Motor Pulley, Reversing Switch or Cutters. 68 lbs. SHAPR	
1181 Steel Stand, Top: $16\frac{1}{4}$ " x $18\frac{1}{4}$ ", $26\frac{1}{8}$ " High. 59 lbs. SHAST	
1197 Belt Guard and Motor Bracket for 1 H.P. motors. 35 lbs. SHAPV	
1190 Stub Spindle for 3 Lip Cutters with $\frac{1}{2}$ " Hole. 1 lb. SHASP	
987 Safety Ring Guard with Bracket, Hexagon Post, Spring Bar with Guard Ring and Screws. 9 lbs. NESGA	
430 V-Belt for use with 1197 Bracket. 1 lb. FORSL	
1185 $5\frac{3}{8}$ " Motor Pulley, Specify Bore. $2\frac{1}{2}$ lbs. SHAPU	
1199-C Complete Shaper Unit Consisting of all of the above without Motor, Switch or Cutters. 149 lbs. SHAPH.	
1199 Same as 1199-C but without Stub Spindle, Safety Ring Guard, Motor, Switch or Cutters. 167 lbs. SHAPW	
1188 Shaper Unit consisting of No. 1180 Shaper, No. 1181 Stand, No. 1183 Belt Guard and Motor Bracket, No. 1185 Flanged Pulley and No. 410 V-Belt without Motor or Reversing Switch. 154 lbs. SHAUN	
1183 Belt Guard and Motor Bracket for $\frac{1}{2}$ H.P. Motors. 27 lbs. SHABG	
410 V-Belt for use with 1188 Bracket. $\frac{5}{8}$ lb. BELTB	

THE DELTA MANUFACTURING COMPANY • MILWAUKEE, WIS.

Three Lip Shaper Cutters In A Wide Variety of Shapes Meet All Needs

These 3-lip cutters are a new development in that they offer unlimited possibilities in hundreds of moulding shapes. Cope and reverse mouldings, sash mouldings, door mouldings, doors for cabinet work or buildings, brick moulds, base moulds, back moulding are but a few of the applications where these versatile cutters may be used.



Made of special steel and hardened in oil, these cutters can be re-sharpened again and again merely by grinding across the faces of the cutting lips. Since they have involute relief, the sharpening does not change their shape, and the relief permits a true shaving cut while leaving a strong, well-supported edge on the cutter. Collars for use with these cutters are ground to size, not merely rough-turned, so that they run perfectly true and will not score the work.

Made in two sizes: with $\frac{1}{2}$ " hole for use on shapers and with $\frac{5}{16}$ " hole for use on drill press. The latter can also be used on shapers with the $\frac{1}{8}$ " spindles.

LARGE CUTTERS WITH $\frac{1}{2}$ " HOLE

Sash cutters are designed for stock $1\frac{1}{8}$ " to $1\frac{3}{4}$ " thick

INDIVIDUAL CUTTERS AND COLLARS

SHAPED CUTTERS		STRAIGHT CUTTERS	
D-100	As Shown.....	D-104	1" x $1\frac{1}{8}$ " Diam.....
D-101	As Shown.....	D-105	$1\frac{1}{2}$ " x $1\frac{1}{8}$ " Diam.....
D-102	As Shown.....	D-107	$\frac{1}{2}$ " x $1\frac{1}{8}$ " Diam.....
D-103	As Shown.....	D-108	$\frac{1}{4}$ " x $1\frac{1}{8}$ " Diam.....
D-106	45 Degree.....	D-127	$\frac{3}{8}$ " x $1\frac{1}{8}$ " Diam.....
D-109	Round Nose.....	D-129	$\frac{3}{8}$ " x $2\frac{1}{2}$ " Diam.....
D-110	Drawer Joint.....	*D-130	$\frac{3}{8}$ " x $1\frac{1}{8}$ " Diam.....
D-120	Ogee.....	D-139	$\frac{1}{4}$ " x $2\frac{1}{2}$ " Diam.....
D-121	Fem. Sash.....	*For Sash Work.	
D-123	Cab. R. H. Male.....	MISCEL. COLLARS	
D-124	Cab. L. H. Male.....	D-132	$\frac{3}{8}$ " x $1\frac{1}{8}$ ".....
D-125	Cab. R. H. Fem.....	D-134	$\frac{1}{2}$ " x $1\frac{1}{8}$ ".....
D-126	Cab. L. H. Fem.....	D-140	$\frac{1}{4}$ " x $1\frac{1}{8}$ ".....
D-128	Male Sash.....	D-141	$\frac{3}{8}$ " x $1\frac{1}{8}$ ".....
D-131	Glue Joint.....	D-150	$\frac{3}{16}$ " x $1\frac{1}{8}$ ".....
D-135	Cove & Bd. L. H.....	D-151	$\frac{1}{4}$ " x $1\frac{1}{8}$ ".....
D-136	Cove & Bd. R. H.....	Collars Have $\frac{1}{2}$ " Hole	
D-137	Cope R. H.....		
D-138	Cope L. H.....		

STANDARD SETS

- No. 1178 Cove and Bead Set Consisting of Cutter D-129, D-135 to D-139 Incl. D-132 and D-134 Collars with No. 1190 Stub Spindle for 1180 Shaper. 2 Lbs. SHAPY.....
- No. 1213 Cove and Bead Set, same as No. 1178 but with No. 1345 Stub Spindle for No. 1340 Shaper. 2 Lbs. SHASB.....
- No. 1182 Standard Set Consisting of D-100 to D-109 Inclusive and 8 Suitable Collars Ranging from $\frac{3}{4}$ " to $1\frac{3}{4}$ " Diam. Packed in Wood Box. $3\frac{1}{2}$ Lbs. SHACU.....
- No. 1184 Sash and Cabinet Set Consisting of D-108, D-120 and 121, D-123 to D-128 Incl. and D-130. Collars D-140, 141, 150 and 151 with 1190 Stub Spindle for 1180 Shaper. In Wood Box. 3 Lbs. SHACB.....
- No. 1214 Sash and Cabinet Set same as No. 1184 but with No. 1345 Stub Spindle for 1340 Shaper. 3 lbs. SHASD.....

COLLAR SETS

Increased by Sixteenths Inches. $\frac{3}{8}$ " Thick, $\frac{1}{2}$ " Hole. Packed in Wood Box.

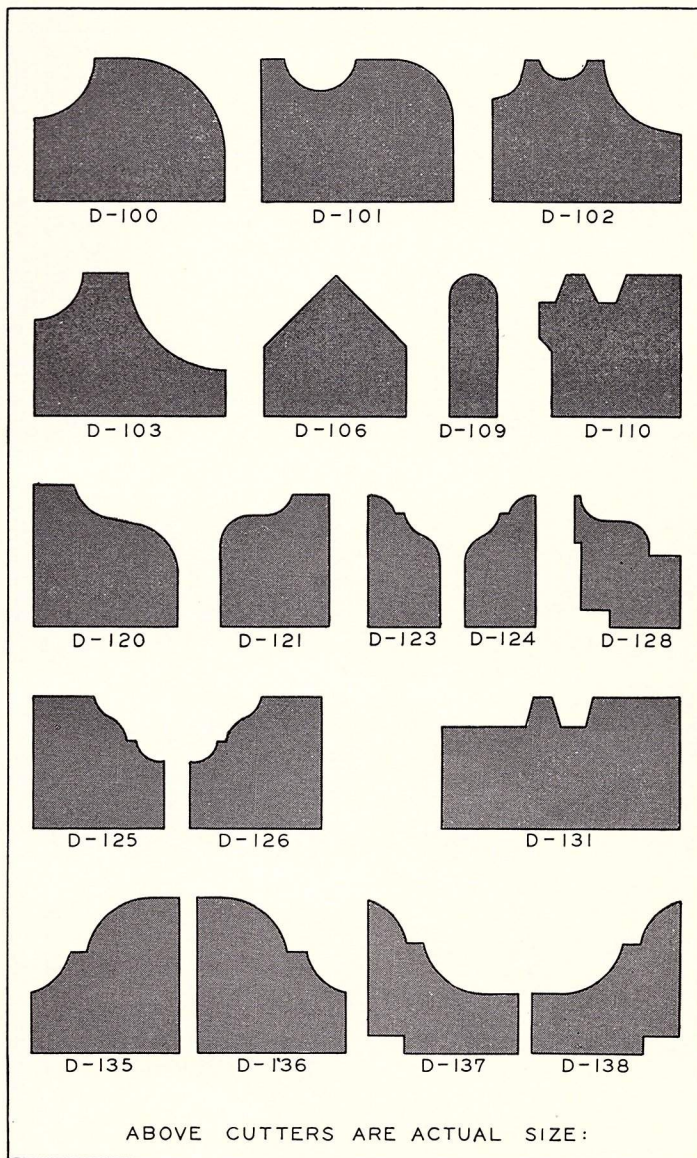
- No. 1210 Seven Collars from $\frac{3}{4}$ " to $1\frac{1}{8}$ " Diam. $\frac{3}{4}$ Lb. SHASU.....
- No. 1211 Six Collars from $1\frac{1}{8}$ " to $1\frac{1}{2}$ " Diam. 1 Lb. SHASV.....
- No. 1212 Six Collars from $1\frac{1}{8}$ " to $1\frac{7}{8}$ " Diam. $1\frac{1}{2}$ Lbs. SHASW.....
- No. D-152 Wood Box with Slide Lid.....
- No. D-154 Wood Box with Slide Lid.....
- No. 1190 Stub Spindle. 1 Lb. SHASP.....

SMALL CUTTERS WITH $\frac{5}{16}$ " HOLE

For use on drill presses or shapers with $\frac{5}{16}$ " spindles. Order by number shown in table.

- No. 978 Adapter for $\frac{5}{16}$ " hole cutters. Fits No. 974 drill press spindle. 8 ozs. NESSA.....
- No. 979 Set of six depth collars, $\frac{5}{16}$ " hole. 8 ozs. NESDC.....
- No. 980 Complete Set of 24 Cutters listed to right, (including D-69), $\frac{5}{16}$ " hole, with No. 978 adapter and No. 979 collars, packed in wood box. 2 Lbs. NESSC.....

LARGE 3-LIP CUTTERS WITH $\frac{1}{2}$ " HOLE



ABOVE CUTTERS ARE ACTUAL SIZE:

SMALL CUTTERS $\frac{5}{16}$ " HOLE

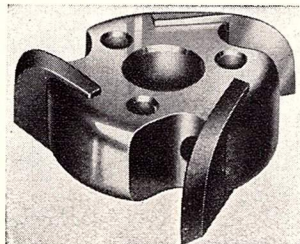
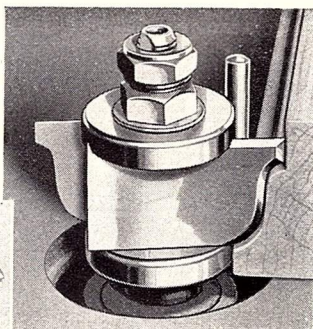
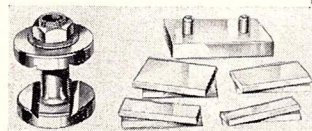
For use on Drill Press. Can also be used on Shaper.

No.	Diam.	Width	Radius	No.	Diam.	Width	Radius	No.	Diam.	Width	Radius
D-1	.950	.177	.125	D-60	.950	.125		D-30	1.18	.282	.125
D-2	.950	.264	.187	D-61	.950	.156		D-31	1.24	.344	.156
D-3	.950	.354	.250	D-62	.950	.187					
D-4	.950	.442	.312	D-63	.950	.250					
				D-69	1.25	1.0					
D-20	.994	.221	.125	D-80	1.25	.442	$\frac{1}{8}$ "	D-50	1.13	.194	.093
D-21	1.03	.442	.250					D-51	1.20	.260	.125
D-40	1.09	.303	.093	D-10	1.02	.177	.125	D-70	1.12	.177	
D-41	1.16	.388	.125	D-11	1.06	.264	.187	D-71	1.21	.282	
				D-12	1.09	.354	.250				
				D-13	1.13	.442	.312				

(FOR PRICES SEE ATTACHED PRICE LIST)

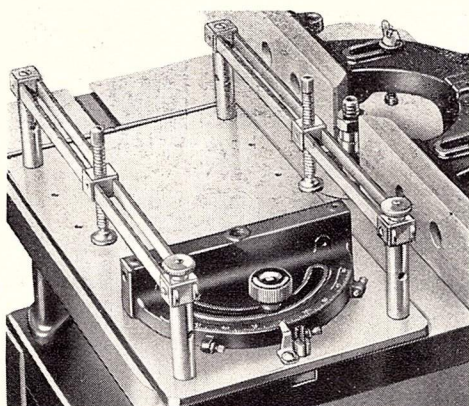
THE DELTA MANUFACTURING COMPANY • MILWAUKEE, WIS.

When a setup has been made, it can be kept for future use, as the whole head may be removed from the machine. Blank knives are 2½" long, self-hardening and sand-blasted so that cutter design may be drawn directly on them.

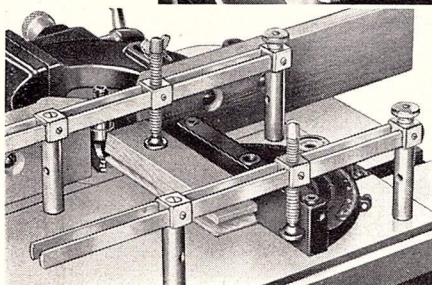


No. 1343 Steel Cutter Head uses Circular Saw Moulding Knives shown on page 35.

No. 1186 Sliding Jig.

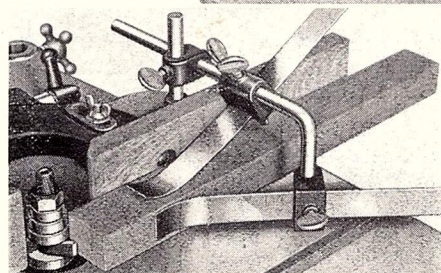
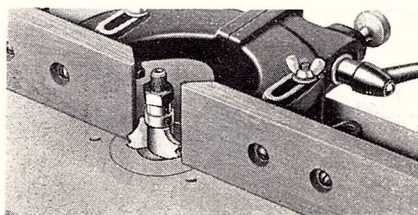


Complete safety is provided by this sturdy jig.



This shows how even a short narrow block may be safely shaped using the jig.

No. 982 Fully Adjustable Shaper Fence.



No. 983 Hold Downs an Added Safety Feature for Shaper work.

Additional Shaper Cutters, Accessories

Safety Cutter Head with Blank Knives

Special mouldings that cannot be made with the standard shaper cutters, special cope cuts—all the work that the experienced shaper operator wants to do can be done with the Cutter Head and blank knives. The head is an innovation. It is accurately machined so as to eliminate vibration; grooves carefully milled to close tolerances to insure both knives being clamped with the same pressure and a spherical equalizing washer is used under the head.

- No. 1342 Cutter Head for ¾" Spindle with Tightening Block. Without Knives. Shipping Weight 1½ lbs. Code Word SHANC.....
- No. 1192 Cutter Head for ½" Spindle with Tightening Block. Without Knives. Shipping Weight 1½ lbs. Code Word SHAPB.....
- No. 1193 Two ½" Knives. Ship. Weight 6 oz. Code Word SHAPC..
- No. 1194 Two ¾" Knives. Ship. Weight 6 oz. Code Word SHAPD..
- No. 1195 Two 1" Knives. Ship. Weight 6 oz. Code Word SHAPE..
- No. 1196 Two 1½" Knives. Ship. Weight 6 oz. Code Word SHAPF..

Steel Cutter Head Uses Saw Moulding Knives

The making of mouldings on the circular saws has become a practical and profitable operation for many wood working shops. A large assortment of knives are available which are shown on page 35. Since many shops are well supplied with these knife sets we have increased the usefulness of them by developing this three-knife safety cutter whereby the knives may be used on the shapers also. It has been acclaimed by many users as the freest cutter they have ever used.

Made of special high speed steel accurately balanced with the knives securely locked into position. Has ¾" hole with ½" bushing to fit either ½" or ¾" spindles.

- No. 1343 3-Knife Safety Cutter Head. ¾" bore with ½" bushings with wrench. Without knives. Ship. Wt. 1½ lbs. Code Wd. SHAND

Sliding Jig Insures Safe Operation

The jig consists of a ground plate, fitted with a key to slide in the groove in the shaper table. The plate carries the well-known Auto-Set miter gage head, which may be set at any angle and automatically stopped at 90 and 45 degrees.

Carried on top of the plate are two clamp rails, with screw clamps that may be slid to any position along the rails. When the work is clamped against the miter-gage head and against the plate, the whole jig is slid past the cutters.

The hands never come close to the cutters, and the work cannot slip. This means not only perfect safety but also much more accurate work.

- No. 1186 Sliding Shaper Jig, with ground base plate, fitted with miter-gage head and swinging stop link, four clamp-rail posts, four clamp-rails and two clamp-screws. To fit No. 1180 and 1340 shaper. Shipping Weight 19 lbs. Code Word SHJIG.....
- No. 873 Additional clamp screw, with block. Shipping Weight 8 oz. Code Word NECCS.....

NOTE: This sliding jig may be adapted to many other machines and for many other operations. Key on base plate is ¾" by ¾".

Fully Adjustable SHAPER FENCE Is Marvel of Convenience

Not only thoroughly safe to use, but unequalled in ease of operation, convenience of design and accuracy of adjustment, the No. 982 shaper fence is the best type available to the user of small shapers. For ordinary shaper work the two faces of the fence are set in line, while for jointing or for work where all the edge of the material is cut away, one face of the fence may be adjusted forward to support the stock as it leaves the cutter. Each section of the fence may be adjusted forward or backward independently—and locked by a clamp lever which may be set at any angle to suit the operator.

The No. 982 Safety Shaper Fence is standard equipment on the No. 1180 Shaper, and is designed to fit the No. 989 and No. 999 drill presses also. It can be used on any type of shaper, and is actually more massive and much more convenient than many fences supplied on many heavy production shapers.

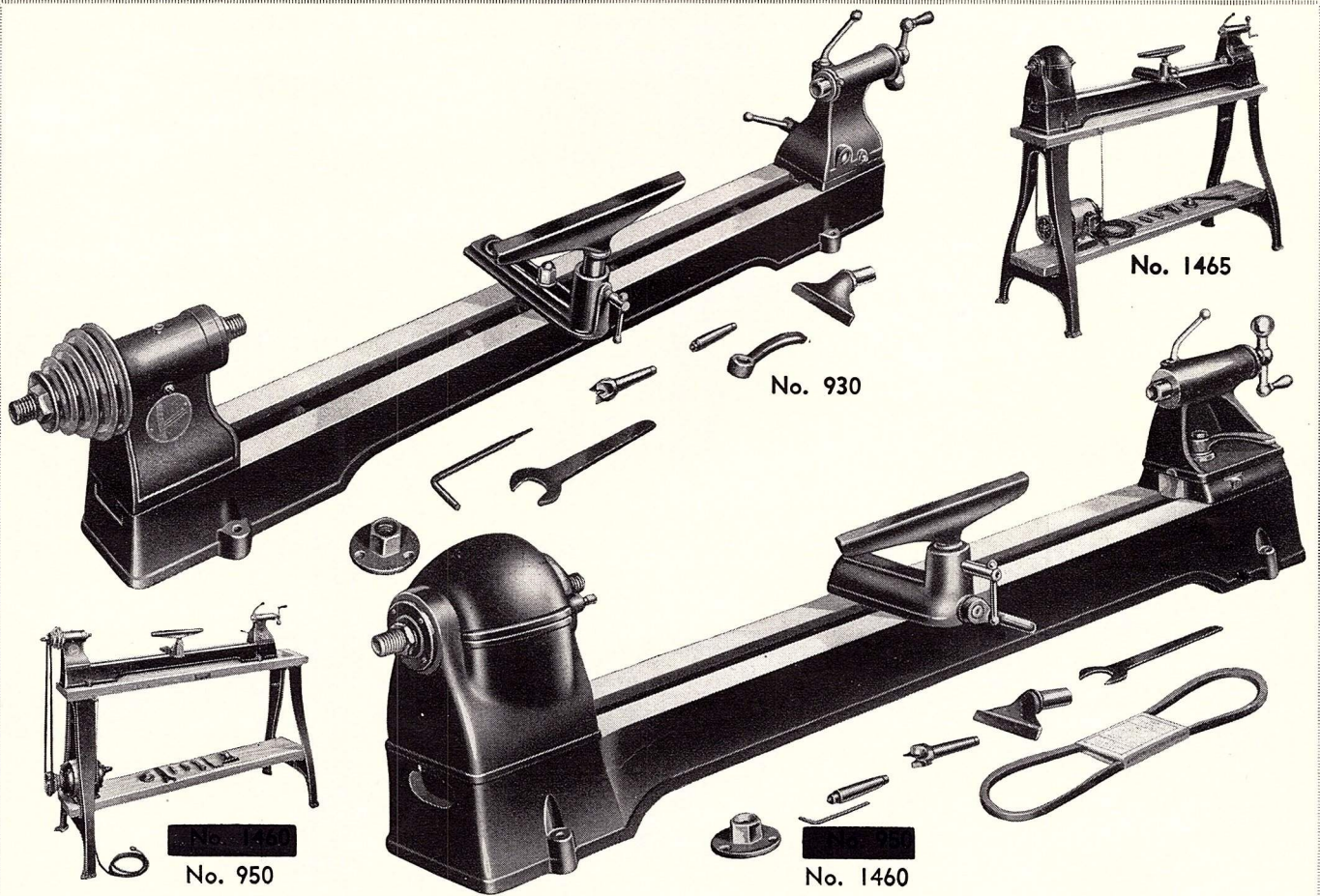
Spring hold-downs, available for use with the fence, add much to the convenience of operation. They hold the work not only against the fence, but also against the table. They can be used on either end of the fence, and are provided with universal brackets and long, flexible springs that accommodate work up to 3½" thick.

- No. 982 Patented Shaper Fence to fit No. 989 and 999 drill presses, complete with wood facings, bolts and wingnuts, similar to standard fence on 1180 shaper. Ship. Wt. 12 lbs. Code Wd. NESSF.
- No. 983 Set of Shaper Hold-Downs, with straight and bent posts, two springs, two spring brackets, and one post bracket, for use with No. 982 shaper fence. Ship. Wt. 2 lbs. Code Wd. NESHD.....

(FOR PRICES SEE ATTACHED PRICE LIST)

THE DELTA MANUFACTURING COMPANY • MILWAUKEE, WIS.

THESE TWO LATHES ARE ACCURATE, RIGID AND SAFE



Improved No. 930 11-Inch Lathe

The construction of this 11-inch Timken bearing lathe has been improved in that it now has an exceptionally heavy and accurately machined cast iron bed in place of the steel bed. It swings 11", and 37" between centers—has a self indexing headstock with four speeds from 900 to 3400 R.P.M. No. 2 Morse taper centers in head and tail stock. Timken bearings in head for long wear, a full 1 1/4" diameter hollow spindle threaded inboard and outboard (1" diameter, 8 threads per inch) for chuck and face plate work 5/8" hole through center for repetition work. Thousands of these dependable lathes are in daily use in shops all over the world. Its rigidity, accuracy and low price make it a favorite unit.

Cat. No.	Price
930 11" Lathe with Cast Iron Bed and Accessories as Shown, without Belt, Motor Pulleys, Motor, or Switch Rod. 76 lbs. DUBLA	
1463 Lathe Bench, Top, Shelf, Legs and Bolts. 97 lbs. CASTP ..	
940 Screw Center (See Page 43). 1/2 lb. DUBLJ	
937 6" Face Plate (See Page 43). 3 lbs. DUBLH	
941-A Extra Tool Support Base (See Page 43). 4 1/2 lbs. DUBLL ..	
694 24" Tool Rest (See Page 43). 7 lbs. TOSUL	
521 V-Belt for use with 1463 Stand. 1 lb. BELTP	
932 4-Step Motor Pulley, 1/2" Bore. 2 lbs. DUBLC	
950-C Complete 11" Lathe Consisting of all of the above without Motor or Switch Rod. 186 lbs. DUBUC	
950 Same as 950-C but without Screw Center, 6" Face Plate Extra Tool Support Base, 24" Tool Support, Motor or Switch Rod. 170 lbs. DUBUN	
931 Headstock for 11" Lathe. 12 1/2 lbs. DUBLS	

No. 1460 12-Inch Ball Bearing Lathe

Here is a lathe that provides the biggest amount of lathe for the least amount of money. Swings 12" by 37" between centers. It has an exceptionally heavy cast iron base machined perfectly true for accuracy. Indexing device on heavy cast iron head stock—complete guarding on belt—full 1 1/4" spindle with 5/8" hole and No. 2 Morse taper for centers—inboard and outboard nose threaded 1" diameter, 8 threads per inch—Spindle carried on two heavy-duty sealed-for-life New Departure ball bearings which require no lubrication—speed 900 to 3400 R.P.M.—tail-stock is heavy, has self ejecting center—these are but a few of the reasons why this lathe is the unit you want for YOUR shop.

Cat. No.	Price
1460 12" Ball Bearing Lathe with Belt and Accessories as shown, without Motor Pulley, Motor, or Switch Rod. 160 lbs. CASTL	
1463 Lathe Bench, Top, Shelf, Legs and Bolts. 97 lbs. CASTP ..	
940 Screw Center (See Page 43). 1/2 lb. DUBLJ	
937 6" Face Plate (See Page 43). 3 lbs. DUBLH	
1461 Extra Tool Support Base (See Page 43). 5 lbs. CASTM ..	
694 24" Tool Rest (See Page 43). 7 lbs. TOSUL	
932 4-Step Motor Pulley, 1/2" Bore. 2 lbs. DUBLC	
1465-C Complete 12" Lathe consisting of all of the above without Motor or Switch Rod. 269 lbs. CASTC ..	
1465 Same as 1465-C but without Screw Center, 6" Face Plate, Extra Tool Support Base, 24" Tool Support, Motor or Switch Rod. 257 lbs. CASTR	

MOTORS RECOMMENDED:

LIGHT DUTY:	62 110 1/8 H.P. CAP. 110/220 V. 60 Cy.
	68 110 1/8 H.P. D.C. 115 V.
MEDIUM DUTY:	62 110 1/8 H.P. Cap. 110/220 V. 60 Cy.
	66 320 1/2 H.P. 3 Ph. A.C. 220/440 V. 50/60 Cy.
	68 510 1/2 H.P. D.C. 115 V.

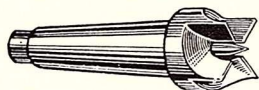
HEAVY: DUTY:	64 510 1/2 H.P. R-I. A.C. 110/220 V. 60 Cy.
	66 720 3/4 H.P. 3 Ph. A.C. 220/440 V. 50/60 Cy.
	68 510 1/2 H.P. D.C. 115 V.

For 3 ph. motors use No. 1320 3 ph. Manual or No. 1329 Magnetic starter with No. 1322 mounting parts. Use No. 1334 switch rod for all single phase motors.
See pages 53 to 55 for motors and switch parts.

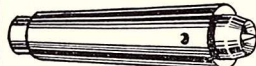
(FOR PRICES SEE ATTACHED PRICE LIST)

THE DELTA MANUFACTURING COMPANY • MILWAUKEE, WIS.

Accessories for 11 and 12 inch Lathes and other Lathes with No. 2 Morse Taper Spindles



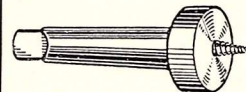
933 DRIVE CENTER
Has replaceable Pin.
5/8 lb. DUBLD.



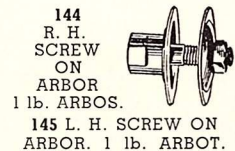
934 CUP CENTER
Has replaceable pin.
5/8 lb. DUBLE.



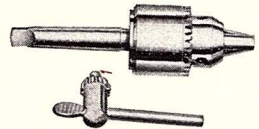
935 ADAPTER
For acces. with 1/2" Hole.
5/8 lb. DUBLF.



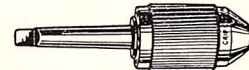
940 SCREW CENTER
Has replaceable 1 1/2" Screw.
1 lb. DUBLJ.



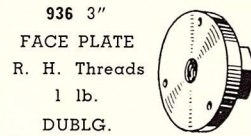
144 R. H. SCREW ON ARBOR
1 lb. ARBOS.
145 L. H. SCREW ON ARBOR
1 lb. ARBOT.



968 GEARED CHUCK
Cap. 1/2", 2 1/2 lbs. CHGEA.



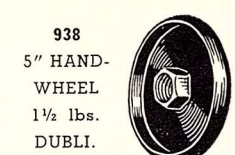
166 KEYLESS CHUCK
Cap. 1 1/2".
2 1/2 lbs. CHTAP.



936 3" FACE PLATE
R. H. Threads
1 lb.
DUBLG.



937-6" FACE PLATE
R.H. and L.H. Threads
3 lbs. DUBLH.



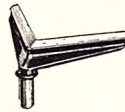
938 5" HAND-WHEEL
1 1/2 lbs.
DUBLI.



692 12" TOOL REST
3 lbs. TOSUM.



690 4" TOOL REST
1 3/4 lbs. TOSUP.



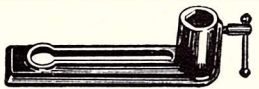
695 RIGHT ANGLE TOOL REST
3 lbs. TOSRA.



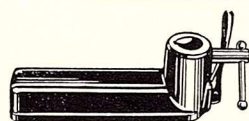
694 24" TOOL REST
7 lbs. TOSUL.



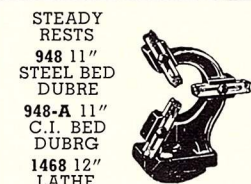
697 FLOOR STAND For Tool Rests
44 lbs.
TOSTA



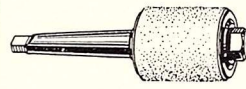
TOOL REST BASES FOR 11" LATHES
941 Steel Bed Lathe.
DUBLK.
941-A Cast Iron Bed Lathe.
DUBLL.



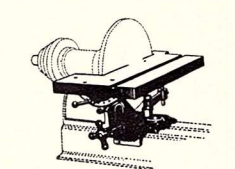
1461 TOOL REST BASE 12" LATHE
5 lbs. CASTM.



STEADY RESTS
948 11" STEEL BED DUBRE
948-A 11" C.I. BED DUBRG
1468 12" LATHE CASTU



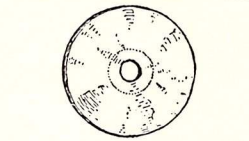
SANDING DRUMS
163 3"x3". SATAP.
164 1 3/4"x2". SATAQ
Sleeves on Pg. 50



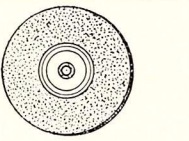
SANDING TABLE FOR 9" AND 11" LATHES
347 For Steel Beds
15 lbs. DESAT.
347-A for C.I. Beds
15 lbs. DESAR.
155 Coarse Garnet Disc.
1 doz. 3/4 lbs. DISGA.
157 Fine Garnet Disc.
1 doz. 3/4 lbs. DISGB.
180 Miter Gage
1 1/2 lbs. DELMI.



WIRE BRUSHES
3114 Fine GRIAH.
116 Medium WIRRO.
3113 Coarse GRIAG.
3115 Fibre GRIAL.



133 BUFFING WHEEL
Two Sections
1/2 lb. BUFFO.



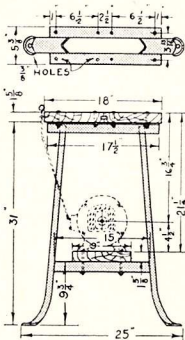
111 60 GRIT 5" EMERY WHEEL
1 3/4 lbs. GRIND.



951 SANDING DISK
R.H. Thread
2 1/2 lbs.
DUBLM.

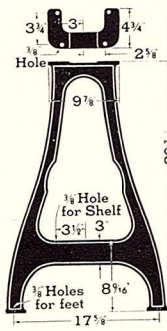
STEEL BENCH LEGS
These bench legs are strongly made of welded steel and make a rigid bench. Use planks 2" thick and 9 1/2" wide. Shelf and top heights suit all our standard belt lengths.

No. 344—Steel bench leg only, as shown,
Each
Ship. Weight 21 1/2 lbs.
Code Word LEGSO.



CAST IRON BENCH LEGS
The latest and best in bench legs. Heavy cast iron, strong, make a sturdy, solid bench. All holes 3/8". Bracket for shelf at bottom.

945 Cast iron bench legs.
Per pair. 60 lbs.
DULEG



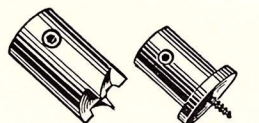
WOOD TURNING TOOLS



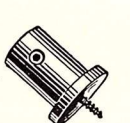
Made of special alloy-steel they will not loose their edge. Extra long handles, 1 1/4" x 10 1/2". Shipping weight 1 1/4 lbs. each.

No. 121 1" Skew Chisel. SKERE
No. 122 3/4" Gouge. GOUGU
No. 123 1/4" Gouge. GOUSA
No. 124 1/2" Skew Chisel. SKEWO
No. 125 1/8" Parting Tool. PARTO
No. 126 1/2" Gouge. GOUGO
No. 127 1/2" Spear Point. SPEAR
No. 128 1/2" Round Nose. RONOS
No. 130 Set of above 8 Tools
TOSET. 6 lbs.

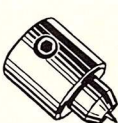
Accessories for Old No. 955 9-inch Lathes only or any Lathes with 1/2 inch Arbor Extensions



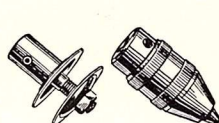
No. 138



140



141



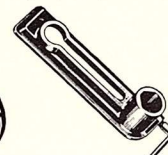
118



120



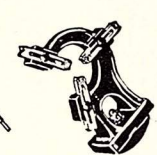
151



143



696



192

No. 138 DRIVE CENTER. 1/2 lb. SPURO.....
No. 140 SCREW CENTER. 3/4 lb. SCREC.....
No. 141 CUP CENTER. 1/2 lb. CUPPO.....

No. 118 ARBOR. 1 lb. ARBOR.....
No. 120 KEYLESS CHUCK. 1 1/2 lbs. CHUKO.....
No. 151 SANDING DISK. 2 1/4 lbs. DISSA.....
No. 143 3" FACEPLATE. 7/8 lb. FACEO.....

No. 696 TOOL REST BASE. 4 lbs. TOSUB....
No. 192 1/8" ALLEN WRENCH. 1/2 lb. AWREN.
No. 958 STEADY REST. 6 lbs. NEWRS.....

(FOR PRICES SEE ATTACHED PRICE LIST)

THE DELTA MANUFACTURING COMPANY • MILWAUKEE, WIS.

Metal Turning Lathes and Accessories

The addition of a countershaft unit (as illustrated) to the 11-inch and 12-inch lathes turns these units into efficient and accurate 16-speed lathes for metal working. The slower speeds can be used for large face plate wood turning. The addition of the slide rest gives you a practical machine for light metal work. Practically everything in lathe work with the exception of screw cutting can be done. Speeds range from 340 to 3400 R.P.M. For 11 and 12-inch lathes. Illustration shows 12-inch lathe—11-inch lathe is similar in appearance.

No.	Description	Wt. Lbs.	Code Word	Price
1466	12" 16 Speed Lathe (illustrated) with No. 1460 Lathe, No. 1463 Stand, No. 1464 countershaft. Without Motor or Switch Rod.....	260	CASTS	
952-A	11" 16 Speed Lathe with No. 930 Lathe, No. 1463 Stand, No. 1464 Countershaft and No. 521 Belt. Without Motor or Switch Rod....	195	DUBUT	
1464	Countershaft Unit, Consisting of Two No. 370 Hangers, 1 No. 378 Shaft, 1 No. 718 Pulley, $\frac{1}{2}$ " Bore for Motor, 1 No. 720 Pulley, $\frac{3}{4}$ " Bore for Shaft, 1 No. 932 Pulley, $\frac{3}{4}$ " Bore for Shaft, 1 No. 284 V-Belt, 2 No. 374 Collars, Bolts and Nuts.....	20	CASTQ	

MOTORS RECOMMENDED: See Page No. 47.

Metal Turning and Spinning Accessories NO. 1462 COMPOUND SLIDE REST

This slide rest is a high grade accessory, heavily and accurately built, with dovetail slides and a graduated compound base rotating through 360 degrees. Feed screws are covered to protect them from dirt and chips, and are fitted with micrometer sleeves, accurately graduated. Alignment bar on front of 11" lathe model can be set for permanent alignment with centers. This is a high-grade slide rest at a reasonable price.

Should be used only with No. 952-A or No. 1466 sixteen speed units, or other lathes with 9" to 12" swing and with speeds low enough for metal turning.

965	Compound Slide Rest for 11" Lathe with Steel Bed. Without Tool Holder or Tools....	31	DURST	
965-A	Compound Slide Rest for 11" Lathe with Cast Iron Bed. Without Tool Holder or Tools....	35	DURSV	
1462	Compound Slide Rest for 12" Lathe same as 965 but with Sub-Base. Without Alignment Bar.....	32	CASTO	
1467	Sub-Base, Clamp and Bolts only—To Convert No. 965 into No. 1462.....	5	CASTT	

NO. 962 BORING BARS AND HOLDER

Holds both bars and square $\frac{1}{4}$ " bits. Two holes in holder facilitate holding of tool. Tool steel, case hardened.

962	Boring Bar Holder with $\frac{1}{8}$ ", $\frac{3}{16}$ ", $\frac{1}{4}$ " Bars.	12 Oz.	DUBBO	
966	Set of Three Boring Bars, $\frac{1}{8}$ ", $\frac{3}{16}$ " and $\frac{1}{4}$ "	8 Oz.	DUBOR	

NO. 1491 METAL SPINNING TOOL REST

Movable pin and holes in top of rest facilitate placing of spinning tool for proper leverage

1491 Tool Rest for Metal Spinning..... 4 SPINB

NO. 939 PLAIN 60° CENTER

This hardened and accurately ground center has a 60° point and a No. 2 Morse taper

939 60° Plain Center..... 12 Oz. DUBLO

TOOLS FOR METAL SPINNING

These fine metal spinning tools are heavy and strong so that the spinning metal may be forced over the form with ease and safety. Made in four different styles, each with handle

1492	Flat Tool with Handle.....	2½	SPINC	
1493	Point Tool with Handle.....	2½	SPIND	
1494	Cut-Off Tool with Handle.....	2½	SPINE	
1495	Beading Tool with Extra Wheel and Handle	2½	SPINF	
1496	Complete Set of Above 4 Tools.....	9	SPING	

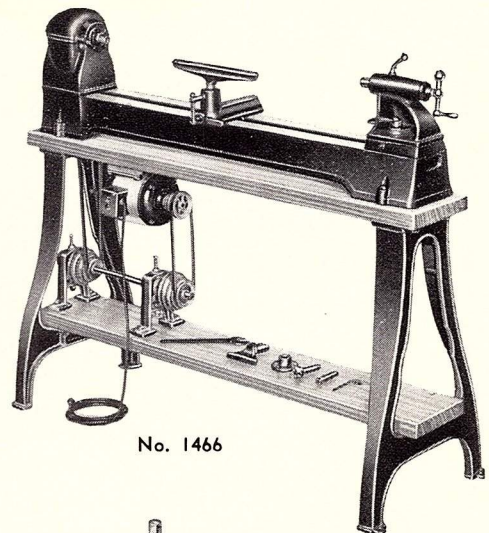
NEW No. 1490 Ball Bearing Center

Shop men who have used this new ball-bearing center marvel at its performance. It is used on the lathe, grinder, screw machine, gear hobber and similar machines. Actual tests show that under gruelling applications it has outlasted four similar units. This ability to "take it" is due to its husky and simple construction. It has a double row of sealed-for-life ball bearings which require no lubrication and will take exceptionally heavy radial and thrust loads. It runs perfectly accurate and true because the center socket is drilled and machined after assembly. Supplied with three replaceable centers and wrench. Shank has No. 2 Morse Taper.

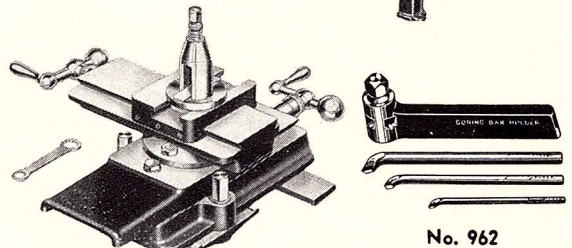
Here is the Ball-Bearing Center the shop man has been looking for—a center free of chatter, it is accurate, husky and true running.

No. 1490—Ball-Bearing Center as illustrated. 1½ lbs. SPINA.....

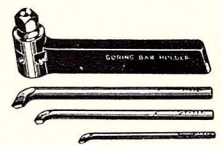
(FOR PRICES SEE ATTACHED PRICE LIST)



No. 1466



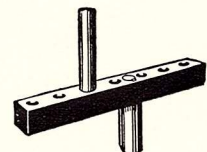
No. 1462



No. 962



No. 939



No. 1491



No. 1492



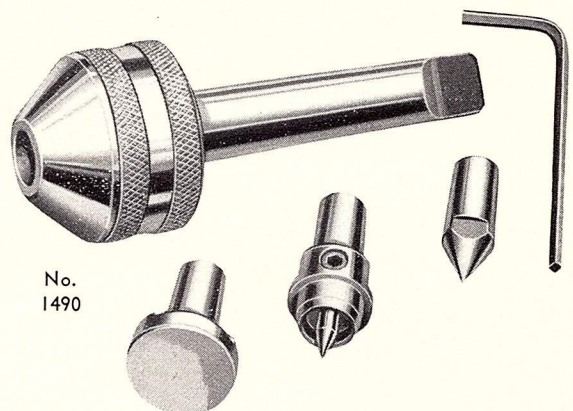
No. 1493



No. 1494



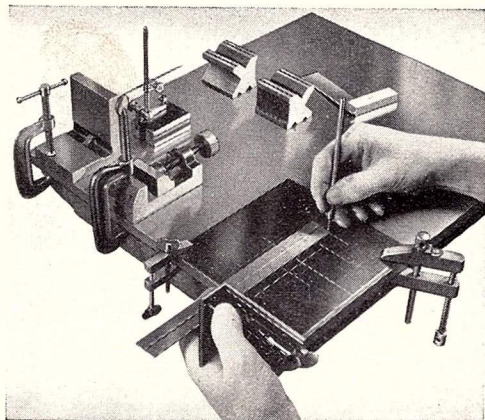
EACH TOOL IS COMPLETE WITH HANDLE



No. 1490

THE DELTA MANUFACTURING COMPANY • MILWAUKEE, WIS.

SURFACE PLATES OFFER FEATURES FOUND ONLY IN HIGH PRICED UNITS



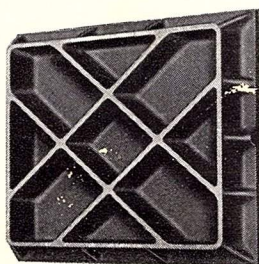
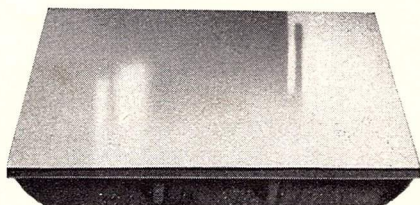
To make a surface plate for layout work 100% useful and convenient, four things are essential. A true surface to start with, a properly ribbed casting to insure that the surface will stay true, ledges at the edges of the plate for clamping purposes and edges that are machined square with each other and with the face.

Formerly these advantages could only be obtained in high-priced, hand-scraped precision plates, and the user was forced either to purchase a plate of this type or else buy a plate that was more or less of a makeshift without ledges or squared edges.

The plates shown here have all of the four points described above. In addition, notice the massive design and heavy ribbing which resists warping. These plates may easily be made into precision plates by simply scraping to a master plate or to each other.

The photo above shows how angle plates, vises, etc., can be clamped to the No. 640 surface plate, and how convenient the squared edges are for laying out work clamped to the plate.

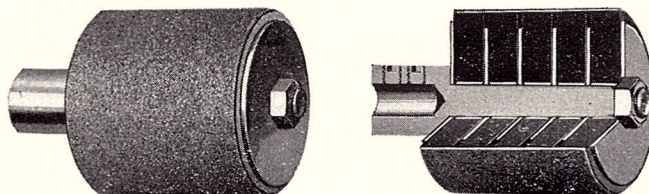
No.	Description	Ship. Wt. Lbs.	Code Word	Price
640	15" x 18" x 3" Surface Plate.....	72	SURFA	
641	16" x 22" x 3" Surface Plate.....	82	SURFB	



Underside of surface plate is shown at left. Note the heavy ribbing of this massive plate and the clamping ledge all around the squared sides.

SANDING DRUMS

Wide Drums for Drill Presses and Lathes

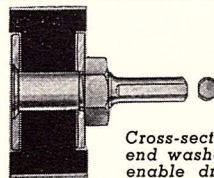


Our patented rubber-cushioned sanding drums employ a principle that insures every part of the drum being evenly expanded. Many sanding drums expand more at the center than at the ends, which means that perfectly flat work is difficult to produce with them. Others, having fasteners for the sandpaper on their surface, will "bump" every time the fastening passes over the work.

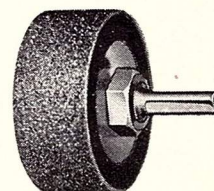
In our drum, each rubber section is separated from its neighbor by non-corrosive bakelite washers, with metal bushings next to the arbor. The disks are expanded perfectly uniformly, produce perfect work and run dead true. No. 840 drum has 1/2" diameter stem to fit 1/2" hollow spindle or chuck. Others have 1/2" bore. See page 48 for drums with No. 2 Morse taper shank to fit No. 930 and 1460 lathes.

No.	Description	Ship. Wt. Lbs.	Code Word	Price
830	3" Diam. x 3" Drum with 1 Sleeve, Fits 1/2" Diam. Shaft.....	2	SADRA	
831	3" x 3" Coarse Garnet Sleeve, Per 6.....	8 oz.	SASLA	
832	3" x 3" Medium Garnet Sleeve, Per 6.....	8 oz.	SASLB	
833	3" x 3" Alum. Oxide Sleeve for Metal, Per 6.....	8 oz.	SASLC	
835	1 3/4" x 2" Drum with 1 Sleeve, Fits 1/2" Diam. Shaft.....	1 1/4	SADRB	
836	1 3/4" x 2" Medium Garnet Sleeve, Per 6.....	4 oz.	SASLE	
837	1 3/4" x 2" Fine Garnet Sleeves, Per 6.....	4 oz.	SASLF	
838	1 3/4" x 2" Alum. Oxide Sleeve for Metal, Per 6.....	4 oz.	SASLG	
840	1 1/2" x 2 1/2" Drum with 1 Sleeve, 1/2" Shank for Hollow Spindle.....	8 oz.	SADRC	
841	1 1/2" x 2 1/2" Medium Garnet Sleeve, Per 6.....	4 oz.	SASLK	
842	1 1/2" x 2 1/2" Fine Garnet Sleeve, Per 6.....	4 oz.	SASLM	
847	1 1/2" x 2 1/2" Alum. Oxide Sleeve for Metal, Per 6.....	4 oz.	SASLO	

Narrow Drums for Hand Drills, Flexible Shafts



Cross-section shows how end washer is recessed to enable drum to be used into corners, also unique shaft section.



Painstaking attention to every point that might add to the usefulness of the tool and the convenience of the user is reflected in such details as the recessed mounting of the end washer, as shown in the cross section. This enables the drum to be used right up into the corners, which cannot be done if the outside washer is not recessed.

Another detail is the shape of the shank. This permits the sanding drum to be used in all 5/16" collets, in all 1/2" and 3/8" three-jaw chucks and in most 1/4" three-jaw chucks.

The drums themselves are of live flexible rubber, which is expanded to hold the abrasive sleeves by tightening the spindle nut. Sleeves are of aluminous oxide and cut accurately and fast.

No.	Description	Ship. Wt. Lbs.	Code Word	Price
679	1 1/2" x 1" Drum with 1 Sleeve 1/16" Shank.....	6	SANAA	
682	1 1/2" x 1" No. 40 Grit Sleeve, Per 6.....	4	SANAD	
683	1 1/2" x 1" No. 80 Grit Sleeve, Per 6.....	4	SANAE	
680	2 3/16" x 1" Drum with 1 Sleeve 1/16" Shank.....	8	SANAB	
684	2 3/16" x 1" No. 40 Grit Sleeve, Per 6.....	5	SANAF	
685	2 3/16" x 1" No. 80 Grit Sleeve, Per 6.....	5	SANAG	
681	3" x 1" Drum with 1 Sleeve, 1/16" Shank.....	12	SANAC	
686	3" x 1" No. 40 Grit Sleeve, Per 6.....	7	SANAH	
687	3" x 1" No. 80 Grit Sleeve, Per 6.....	7	SANAI	

NOTE: Order sanding sleeves as "1 No. 831" where one package is wanted. Do NOT order "6 No. 831 sleeves," as this means 6 packages.

(FOR PRICES SEE ATTACHED PRICE LIST)

THE DELTA MANUFACTURING COMPANY • MILWAUKEE, WIS.

ACCESSORIES AND ATTACHMENTS USEFUL IN ANY SHOP

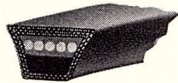
PULLEYS FOR V-BELTS



For belts $\frac{1}{2}$ " wide, $\frac{3}{8}$ " thick and 45° angle. Safety disc type—no spokes—not stamped. Perfectly balanced. Have $\frac{1}{8}$ " hollow head set screw, $\frac{5}{8}$ " and $\frac{3}{4}$ " bores have a $\frac{1}{8}$ " keyway. All sizes can be furnished in $\frac{1}{2}$ ", $\frac{3}{8}$ " and $\frac{3}{4}$ " bores. $\frac{1}{2}$ " bore furnished unless otherwise specified. For boring to other sizes, up to 1" add to catalog price. Maximum bore available on Nos. 5200 to 5300 is $\frac{3}{4}$ ".

Cat. No.	Out-side Diam.	Code Word	Price Each
5200	2"	PULOA	
5225	2 $\frac{1}{4}$ "	PULOB	
5250	2 $\frac{1}{2}$ "	PULOC	
5275	2 $\frac{3}{4}$ "	PULOD	
5300	3"	PULOE	
5350	3 $\frac{1}{2}$ "	PULOF	
5400	4"	PULOG	
5450	4 $\frac{1}{2}$ "	PULOH	
5500	5"	PULOI	
5550	5 $\frac{1}{2}$ "	PULOJ	
5600	6"	PULOK	
5650	6 $\frac{1}{2}$ "	PULOL	
5700	7"	PULOM	
*5710	7 $\frac{1}{2}$ "	PULON	
5800	8"	PULOA	
6100	10"	PULOB	
6200	12"	PULOC	

*Has Keyway.



V-BELTS

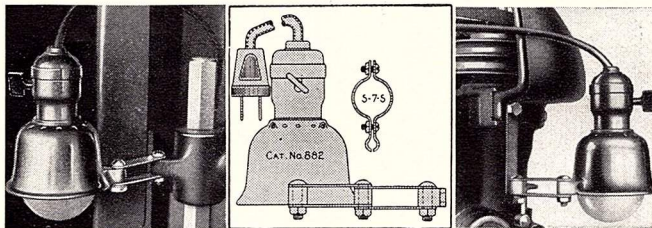
Designed to make perfect contact with the side of the V-groove, these belts will transmit maximum horsepower with minimum slip. Cords are saturated with pure liquid rubber, imbedded in special rubberstock which resists fatigue and carries off heat.

NOTE: When ordering belts for which number is not known, measure around outside diameters of pulleys, then select belt of nearest outside circumference in the table. Do not use inside circumference.

No.	Size, Inches				Angle Deg.	Code Word	Pr. Ea.
	In. Cir.	Out. Cir.	Wd.	Th.			
281	26	28	$\frac{3}{8}$	$\frac{1}{8}$	40	BELTX	
284	28 $\frac{1}{2}$	30 $\frac{1}{2}$	$\frac{1}{2}$	$\frac{3}{8}$	45	BELTJ	
289	44 $\frac{1}{8}$	46	$\frac{1}{2}$	$\frac{3}{8}$	40	BELTJ	
291	27 $\frac{1}{4}$	29	$\frac{1}{2}$	$\frac{3}{8}$	40	BELTW	
294	49	51	$\frac{1}{2}$	$\frac{1}{2}$	40	BELTH	
+331	33	35 $\frac{1}{8}$	$\frac{1}{2}$	$\frac{3}{8}$	45	MULTG	
340	34 $\frac{3}{8}$	36 $\frac{1}{2}$	$\frac{1}{2}$	$\frac{3}{8}$	45	BELUX	
355	36 $\frac{1}{8}$	38 $\frac{3}{8}$	$\frac{1}{2}$	$\frac{3}{8}$	45	FORVB	
387	37 $\frac{3}{8}$	39 $\frac{1}{2}$	$\frac{1}{2}$	$\frac{3}{8}$	45	FORDP	
410	39 $\frac{1}{8}$	41 $\frac{1}{2}$	$\frac{1}{2}$	$\frac{3}{8}$	45	BELTE	
430	40 $\frac{1}{8}$	42 $\frac{3}{4}$	$\frac{1}{2}$	$\frac{3}{8}$	45	FORSL	
453	45 $\frac{3}{8}$	47 $\frac{1}{4}$	$\frac{1}{2}$	$\frac{3}{8}$	45	MORBL	
501	49 $\frac{3}{8}$	51 $\frac{1}{2}$	$\frac{1}{2}$	$\frac{3}{8}$	45	MORUV	
510	50 $\frac{3}{8}$	52 $\frac{3}{4}$	$\frac{1}{2}$	$\frac{3}{8}$	45	JOIVB	
520	52 $\frac{1}{4}$	54 $\frac{1}{8}$	$\frac{1}{2}$	$\frac{3}{8}$	45	BELTC	
521	61	62 $\frac{3}{4}$	$\frac{1}{2}$	$\frac{3}{8}$	45	BELTP	
530	52 $\frac{1}{8}$	54 $\frac{3}{4}$	$\frac{1}{2}$	$\frac{3}{8}$	45	BELTD	
560	56 $\frac{1}{8}$	58 $\frac{1}{8}$	$\frac{1}{2}$	$\frac{3}{8}$	45	EICVB	
568	57 $\frac{1}{4}$	59 $\frac{1}{8}$	$\frac{1}{2}$	$\frac{3}{8}$	45	FORVD	
583	58 $\frac{1}{8}$	60 $\frac{1}{4}$	$\frac{1}{2}$	$\frac{3}{8}$	45	FORBL	
588	59 $\frac{1}{2}$	61 $\frac{1}{8}$	$\frac{1}{2}$	$\frac{3}{8}$	45	FORVC	
595	59 $\frac{3}{8}$	61 $\frac{1}{4}$	$\frac{1}{2}$	$\frac{3}{8}$	45	BABEL	
618	62 $\frac{3}{8}$	64 $\frac{1}{2}$	$\frac{1}{2}$	$\frac{3}{8}$	45	BELTL	
644	64 $\frac{1}{8}$	65 $\frac{1}{8}$	$\frac{1}{2}$	$\frac{3}{8}$	45	BELTF	
670	67 $\frac{1}{8}$	69	$\frac{1}{2}$	$\frac{3}{8}$	45	BELTU	
*673	72 $\frac{3}{8}$	74 $\frac{1}{2}$	$\frac{1}{2}$	$\frac{3}{8}$	45	PREBL	
750	75 $\frac{1}{8}$	76 $\frac{1}{8}$	$\frac{1}{2}$	$\frac{3}{8}$	45	JOBAS	

*This belt $\frac{1}{8}$ " wide, for No. 620 drill press.

†Special belt for variable-speed scroll-saw



MANY USES FOR LAMP ATTACHMENT

To bring light to your work just where it is needed, in volume enough for accuracy in following layouts, yet not bright enough to glare, there is nothing quite the equal of the No. 882 lamp attachment. Swung on the built-in brackets on drill press, band saw, scroll saw or other machine, it brings the light just where it is needed, yet can be swung out of the way at touch of the finger. It furnishes every machine with its own individual illumination, and makes it independent of the shop lighting system.

It can be used as a workbench light, and provided with additional links to place it wherever wanted over a wide bench. It can be used as a sewing-machine light, as an illuminant for laboratory instruments and other purposes. Uses 15 or 25 W. Bulbs.

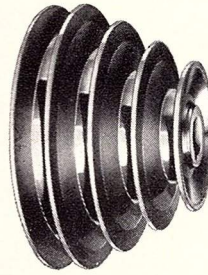
No. 882 Lamp Attach. with shade, Socket and Cord. Four Flat Links, Three Bolts and Attachment Bracket. Shipping Weight 1 $\frac{1}{2}$ lbs. Code Word LAMPA

No. 1134 Extra Support Links, Spacer, Screw, Nut, per pair. Code Wd. LAMPB

No. 1135 Attachment Bracket for 700 Scroll Saw. Code Wd. LAMPC

No. S-8 Clamp for 970 Drill Press

No. SBS-50-S Bracket for 785, 385 Band Saws



FOUR-STEP CONE PULLEYS

Made for the same size V-belt as plain pulleys listed opposite. Pulleys may be used in pairs as listed in table below and will provide the speed listed in the third column when used with 1725 r.p.m. motor.

All cone pulleys available in $\frac{1}{2}$ ", $\frac{3}{8}$ " and $\frac{3}{4}$ " bores. $\frac{3}{8}$ " and $\frac{3}{4}$ " bores have a $\frac{1}{8}$ " keyway. $\frac{1}{2}$ " furnished unless otherwise ordered.

No. 718 Wt. $\frac{3}{4}$ lb. Code CONPA

No. 720 Wt. 1 $\frac{1}{4}$ lbs. Code CONPB

No. 932 Wt. 2 $\frac{1}{2}$ lbs. Code DUBLCL

No. 985 Wt. 2 $\frac{1}{2}$ lbs. Code NEWPU

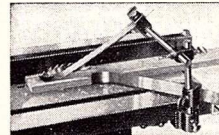
Driver	Driven	Speeds with 1725 r.p.m. motor			
718	718	900	1500	2200	3450
720	720	1200	1545	1980	2575
718	720	650	1000	1300	1725
720	718	1725	2400	3400	5000
932	932	900	1400	2200	3400
985	985	590	1275	2450	5000

SPEED TABLE

This table will enable you to select the proper pulleys for approximate speeds listed. Machine pulley speeds are based on a motor speed of 1725 R.P.M.

Mot. Pulley Size		PULLEY ON MACHINE: SIZE IN INCHES												
Ins.	2	2¼	2½	2¾	3	3½	4	5	6	7	8	10	12	
2	1725	1520	1360	1230	1120	956	833	660	548	468	418	321	270	
2¼	1965	1725	1500	1400	1278	1088	950	753	624	533	465	371	308	
2½	2185	1940	1725	1560	1421	1220	1052	837	695	593	518	413	343	
2¾	2410	2112	1905	1725	1572	1338	1165	926	768	657	573	457	380	
3	2625	2340	2085	1890	1725	1468	1279	1011	842	720	628	500	416	
3½	3108	2743	2458	2210	2012	1725	1500	1190	990	845	738	588	489	
4	3580	3155	2810	2550	2312	1980	1725	1368	1135	972	847	676	562	
5	4500	3975	3550	3205	2915	2495	2165	1725	1430	1220	1065	851	708	
6	5425	4785	4275	3885	3515	3005	2615	2080	1725	1474	1285	1010	932	
7	6375	5625	5005	4548	4145	3522	3060	2418	2010	1725	1505	1200	1000	
8	7300	6425	5745	5200	4748	4007	3510	2795	2315	1950	1725	1375	1142	
10	9125	8050	7200	6502	5945	5050	4400	3498	2900	2475	2160	1725	1432	
12	10100	9700	8675	7845	7150	6100	5300	4202	3495	2980	2600	2045	1725	

HOLD DOWNS FOR SAW AND SHAPER



This attachment consists of a clamp which fits either side of table, and which carries adjustable springs to bear on the work. One spring is adjusted to press the work to the fence and the other to press it down to the table. With this attachment the fingers need never come near the revolving blade or cutter at all.

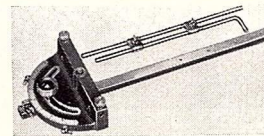
No. 871 Hold down for 1160 Saw with clamp, bracket and springs. Ship. Wt. 4 $\frac{1}{2}$ lbs. Code word, NECHO

No. 983 Hold down for 1180, 1188 and 1199 Shapers, posts, springs, brackets. Ship. Wt. 2 Lbs. Code word NESHD

No. 1131 Clamp Bracket for 871. Wt. $\frac{1}{2}$ lb. Code Wd. NECHQ

No. 1132 Short Rod for 871. Wt. $\frac{1}{2}$ lb. Code Wd. NECHS

No. 1133 Long Rod for 871. Wt. $\frac{1}{2}$ lb. Code Wd. NECHT

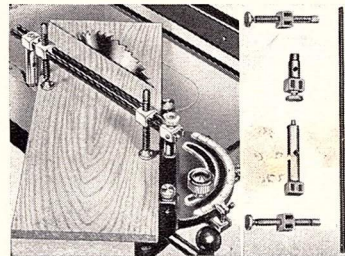


MITER GAGE

An added convenience for saw work. Has individually adjustable index stops—tapered pivot insures accuracy—massive, heavy body, gives full support, will not spring—heavy $\frac{3}{8}$ " x $\frac{3}{4}$ " bar, very rigid, 17" long—full $\frac{1}{8}$ " diameter stop rods with two heavy

clamps. No. 864 Miter Gage. Ship. Wt. 4 $\frac{1}{2}$ lbs. Code NECMI

SAFE, ACCURATE WORK with CLAMP ATTACHMENT



Assures perfect safety in cross cutting and mitering, because the gage, carrying the clamped work, can be slid into the cut with one hand, back of the miter gage. The hand need never be in front of miter gage or near blade.

No. 865 Miter Clamp Attachment, consisting of Clamp Bar, two Sliding Clamp Screws, Front and Rear Posts, to fit No. 864 Miter Gage only. Ship. Wt. 2 $\frac{1}{2}$ lbs. NECLA

No. 873 Extra Clamp Screw and Block for Clamp Attachment. Ship. Wt. 4 oz. Code NECCS

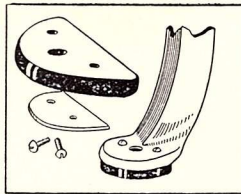
(FOR PRICES SEE ATTACHED PRICE LIST)

THE DELTA MANUFACTURING COMPANY • MILWAUKEE, WIS.

RUBBER FEET for STEEL STANDS

Make machines run smoother and quieter. Are of the correct composition to stand hard usage, while having enough flexibility to absorb slight vibrations. Supplied with metal plates to fit in the recesses of our stand feet, and drilled and tapped for machine screws inserted from the top of the feet.

No. 353 Set of rubber feet, with plate & screws. Wt. 10 oz. Code BURFE.



GRAY MACHINE ENAMEL

To have your entire shop match the color of your tools, use this gray machine enamel. It has a hard smooth surface—dries quickly. Carried in three shades.

No. 101 Light. Code Word PAINA

No. 102 Medium. Code Word PAINB.

No. 103 Dark. Code Word PAINC.

Shipping weights: 1 qt., 5 lbs.; 1/2 gal., 8 lbs., 1 gal., 14 lbs. NOTE: paint is not mailable. Shipment must be made by express or freight.

RUST-GO

Rust-Go instantly remove all traces of rust and grease from the surface of polished iron or steel. Leaves surface chemically clean. Is not mailable and is not shipped direct. Your local dealer has it in stock.

No. 100 1/2 Pint 1/2 Gallon 1 Gallon

STOP-RUST

A new development. When applied to any clean, polished metal surface it eliminates the formation of rust or oxidation. Is not sticky or oily. Has a hundred and one uses. Sold in 1 pint cans. Is mailable.

No. 109 1 Pint can Stop Rust... No. 110 Case of 12 one-pint cans...

LINE SHAFT EQUIPMENT

SHAFT HANGERS—Self-aligning in every direction. Adjustable up and down from 4" to 5". Large oil wells. For 3/4" shaft only.

No. 370 Line Shaft Hanger. Ship. Wt. 6 lbs. Code LIHAN.

3/4" SHAFT COLLARS — Steel collars with 3/4" bore. Have 5/16" x 1/8" hollow set screws. Used to keep shaft in proper position lengthwise.

No. 374 3/4" Shaft Collar. Ship. Wt. 4 oz. Code LICAL.

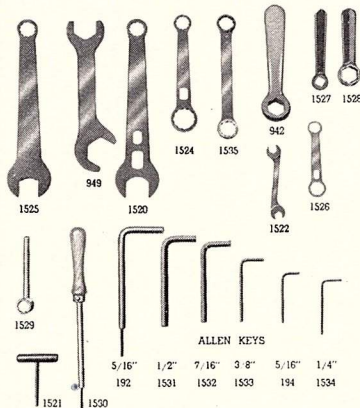
FLEXIBLE SHAFT COUPLINGS—Used to connect motor direct to end of line shaft. One side bored 3/4"; other, 1/2", 5/8" or 3/4". Specify size.

No. 379 Flexible Coupling. Ship. Wt. 1 1/2 lbs. Code LICOP.

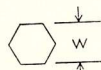
No. 380 Flexible coupling 1/2" bore, both sides. 1 lb. SMCOP

3/4" LINE SHAFTING—Ground and polished to precision limits. Carried in 1, 2, 3, 4, 5, 6, 8 and 10 foot lengths. Above-the-average shafting.

No. 372 3/4" Shafting. Ship. Wt. 2 1/2 lbs. per ft. Code LISHA.



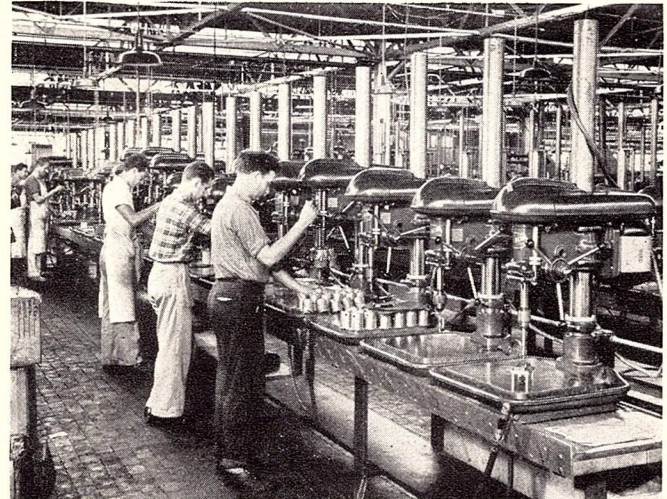
WRENCHES AND ALLEN KEYS



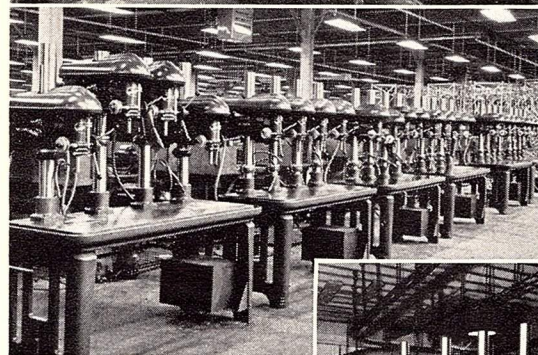
Allen Keys fit various size screws and the "W" Dimension given is the distance across the flat part of the hexagonal as shown by the drawing.

AIRPLANE PLANTS

Find that the use of these remarkable machines speed production and eliminate bottlenecks. Typical installations are shown.



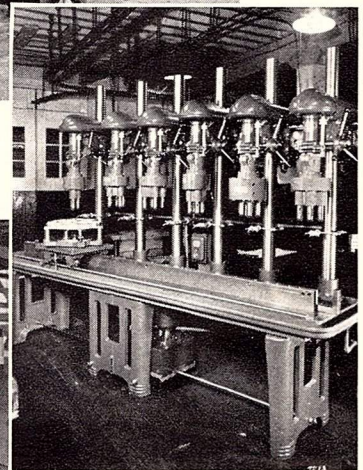
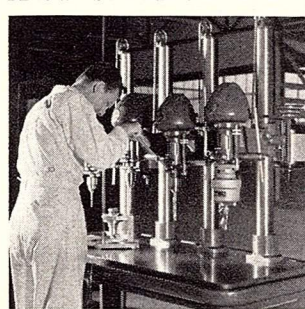
ABOVE:
BENDIX



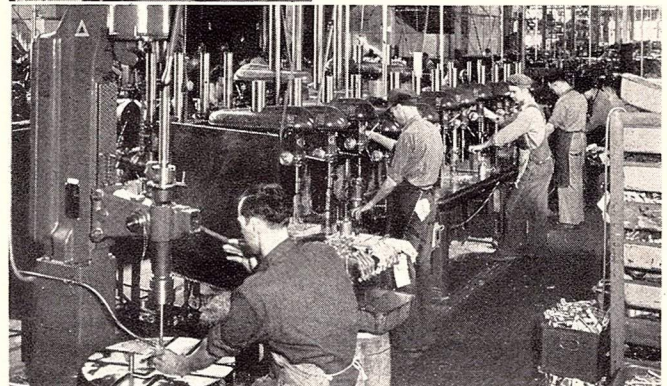
BELOW:
JACOBS

ABOVE: NORTH AMERICAN

BELOW: SOUTHERN AIRCRAFT



BELOW: STEARMAN



Cat. No.	Part No.	Size and Description	Code Word
192	L-47-S	5/16" Allen Key. W = 5/16"	AWREN
194	SP-2	3/8" Allen Key. W = 3/8"	AWREP
942		" Closed End Wrench.	DUBLW
949	DDL-124	1" and 1 1/4" Open End Wrench.	DUBLR
1520		5/8" Closed, 1 1/8" Open Ends, 3/8" and 1/2" Holes	WRENA
1521	MC-11-S	5/16" Allen Key for Moulding Cutter Heads. W = 5/16"	WRENB
1522		" Open Double End Wrench.	WRENC
1523	DP-705	5/8" and 1 1/8" Closed Ends Wrench.	WREND
1524	SR-242	3/8" and 7/8" Closed Ends Wrench.	WRENE
1525	LTA-430	5/8" Closed, 7/8" Open End Wrench.	WRENF
1526	SBS-47	3/8" and 5/8" Closed Ends Wrench.	WRENG
1527	T-103	3/8" Box Wrench	WRENH
1528	L-46	3/4" Box Wrench	WRENI
1529	DSS-41-S	1/2" Socket Wrench	WRENJ
1530	DSS-44-S	1/4" Allen Key. W = 1/8"	WRENK
1531	SP-5	1/2" Allen Key. W = 1/4"	WRENL
1532	SP-6	3/8" Allen Key. W = 1/4"	WRENM
1533	SP-10	5/8" Allen Key. W = 3/8"	WRENN
1534	SP-1	1/4" Allen Key. W = 1/8"	WRENO

(FOR PRICES SEE ATTACHED PRICE LIST)

THE DELTA MANUFACTURING COMPANY • MILWAUKEE, WIS.

POWERFUL MOTORS GUARANTEE DEPENDABLE SERVICE



CHECK These FEATURES

Accurately balanced rotor insures maximum smoothness of operation; prevents destructive vibration.

New Departure "sealed-for-life" ball bearings. Require no lubrication or other attention during their entire life.

Genuine "Master" patented centrifugal short-circuiting device for commutator.

Unusually generous frame design, of modern design, insures adequate mechanical and electrical clearances. Easy to keep clean.

Heavy, unbreakable welded-steel casting, of original design for heavy-duty service.

Oversize air passages throughout motor insure proper cooling and keep motor power at maximum.

Large opening over commutator to provide utmost convenience in making connections or renewing brushes.

Field windings of highest grade enameled wire, carefully wound, insulated and tested.

Finest of enameled cotton-covered wire and highest grade insulation used for rotor windings.

Powerful, well-designed fan and scientific baffling keep motor cool under load.

Heavy-duty Cutler-Hammer two-pole switch. Completely cuts off all current so that there are no "live" leads into motor when the switch is "off".

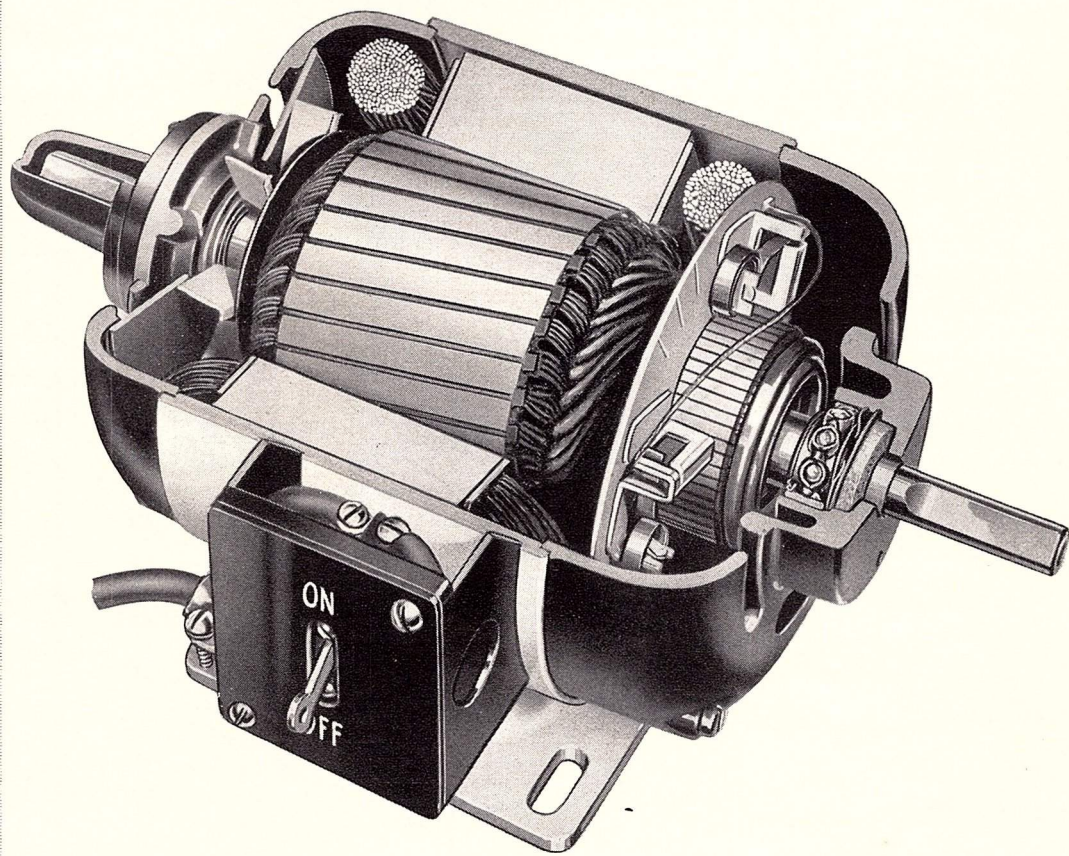
Switch mounted on separate spider to permit removal of conduit-box cover without disturbing switch.

Oversize conduit box. Plenty of room to make connections. Separate spider for switch.

Heavy steel feet, welded to frame. Cannot be broken off accidentally like cast-iron feet.

Heavy-duty 8-foot cord and soft-rubber plug. Cord anchored to conduit box with heavy clamp.

Entirely new type of shaft protector covers extra shaft and affords maximum safety (Pat. pending.)



As the typical cross-section above shows, our motors are designed and built in accordance with the very best practice in motor design. They are comparatively low in cost—but they are NOT built down to a price; quality must be maintained in every particular, and we believe that they are the finest motors obtainable at anywhere near this price.

Casings are of heavy welded steel, with steel feet welded on. These cannot be broken off by accidental impact, as may happen with cast-iron feet on cast end brackets.

These motors will deliver more than their full rated horsepower on all machines for which they are specified. Their overload capacity, due to their generous design and fine construction, is far greater than many similar motors—the overload capacity in most types being 250% of rated horsepower or over.

Our motors in 8½" frame, rated at ½ H.P. and over, should not be confused with

high-speed motors of the same rating built into small frames. Our motors are all of standard speed (1725 r.p.m.) for regular installations. We do not consider that a small-frame, high speed motor is the equal of a standard speed motor built into a large frame, or that it offers any real saving to the customer even though the original price may be lower.

Note that our switches are of heavy-duty two-pole construction (Cutler - Hammer) and are mounted on a separate spider in the extra-large-size conduit box. This switch not only cuts the current completely from the motor when the switch is "off" (which a cheap single-pole switch will not do), but also permits the removal of the conduit box cover for wiring, inspection, etc., without disturbing the switch. This is required by many electrical codes.

Study the features illustrated above. Compare the design and construction of these motors with others and you will realize why they offer such extraordinary value for their comparatively low cost.

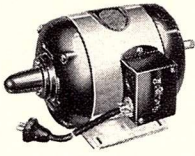
THE DELTA MANUFACTURING COMPANY • MILWAUKEE, WIS.

Catalog Listings and Specifications of Standard Motors

CAT. NO.	FRAME SIZE	H. P.	CURRENT	VOLTAGE	CYCLES	R. P. M.	SHAFT INCHES	SH. WT.
----------	------------	-------	---------	---------	--------	----------	--------------	---------

SPLIT PHASE MOTORS

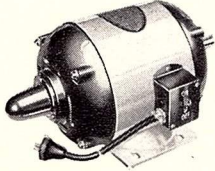
Equipped with heavy duty rubber covered cord and soft rubber plug together with double pole switch. $\frac{1}{4}$ H. P. motors have wick-lubrication bronze bearings. $\frac{1}{2}$ H. P. motors have Sealed-for-life New Departure Ball Bearings which need no lubrication. Double shafts.



60 110	6"	$\frac{1}{4}$	AC	110	60	1725	$\frac{1}{2}$	27
60 125	6"	$\frac{1}{4}$	AC	110	50	1425	$\frac{1}{2}$	27
60 310	6"	$\frac{1}{3}$	AC	110	60	1725	$\frac{1}{2}$	31
60 325	6"	$\frac{1}{3}$	AC	110	50	1425	$\frac{1}{2}$	31
*60 350	6"	$\frac{1}{3}$	AC	110	25	1425	$\frac{1}{2}$	31

CAPACITOR MOTORS

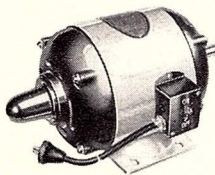
Equipped with heavy-duty rubber-covered cord and soft-rubber plug together with double pole switch. Made for use on either 110 or 220 Volt lines, they are normally supplied connected for 110 volts. Have double shafts—sealed-for-life New Departure Ball Bearings which need no lubrication.



62 110	6"	$\frac{1}{3}$	AC	110/220	60	1725	$\frac{1}{2}$	34
62 120	6"	$\frac{1}{3}$	AC	110/220	50	1425	$\frac{1}{2}$	34
*62 140	6"	$\frac{1}{3}$	AC	110/220	25	1425	$\frac{1}{2}$	34
62 210	6"	$\frac{1}{2}$	AC	110	60	3450	$\frac{5}{8}$	42
62 215	6"	$\frac{1}{2}$	AC	110	50	2850	$\frac{5}{8}$	42
62 510	6"	$\frac{1}{2}$	AC	110/220	60	1725	$\frac{5}{8}$	42
62 520	6"	$\frac{1}{2}$	AC	110/220	50	1425	$\frac{5}{8}$	42

REPULSION INDUCTION MOTORS

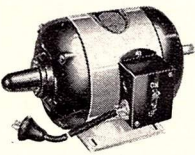
Same equipment as Capacitor Motors (listed immediately above)



64 510	$8\frac{1}{2}$ "	$\frac{1}{2}$	AC	110/220	60	1725	$\frac{3}{4}$	68
64 520	$8\frac{1}{2}$ "	$\frac{1}{2}$	AC	110/220	50	1425	$\frac{3}{4}$	68
*64 540	$8\frac{1}{2}$ "	$\frac{1}{2}$	AC	110/220	25	1425	$\frac{3}{4}$	68
64 710	$8\frac{1}{2}$ "	$\frac{3}{4}$	AC	110/220	60	1725	$\frac{3}{4}$	80
64 712	$8\frac{1}{2}$ "	$\frac{3}{4}$	AC	110/220	60	1140	$\frac{3}{4}$	80
64 720	$8\frac{1}{2}$ "	$\frac{3}{4}$	AC	110/220	50	1425	$\frac{3}{4}$	80
64 910	$8\frac{1}{2}$ "	1	AC	110/220	60	1725	$\frac{3}{4}$	85
64 920	$8\frac{1}{2}$ "	1	AC	110/220	50	1425	$\frac{3}{4}$	85
*64 940	$8\frac{1}{2}$ "	1	AC	110/220	25	1425	$\frac{3}{4}$	85

DIRECT CURRENT MOTORS

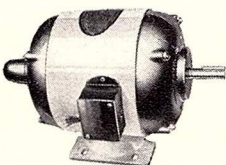
Equipped with heavy-duty rubber covered cord and soft rubber plug together with double pole switch. Have double shafts—Sealed-for-Life New Departure Ball Bearings which need no lubrication.



68 110	6"	$\frac{1}{3}$	DC	115	.....	1725	$\frac{1}{2}$	30
68 120	6"	$\frac{1}{3}$	DC	230	.....	1725	$\frac{1}{2}$	30
68 310	6"	$\frac{1}{2}$	DC	115	.....	3450	$\frac{1}{2}$	38
68 320	6"	$\frac{1}{2}$	DC	230	.....	3450	$\frac{1}{2}$	38
68 510	$8\frac{1}{2}$ "	$\frac{1}{2}$	DC	115	.....	1725	$\frac{3}{4}$	70
68 511	$8\frac{1}{2}$ "	$\frac{1}{2}$	DC	115	.....	1140	$\frac{3}{4}$	70
68 520	$8\frac{1}{2}$ "	$\frac{1}{2}$	DC	230	.....	1725	$\frac{3}{4}$	70
68 521	$8\frac{1}{2}$ "	$\frac{1}{2}$	DC	230	.....	1140	$\frac{3}{4}$	70
68 710	$8\frac{1}{2}$ "	$\frac{3}{4}$	DC	115	.....	1725	$\frac{3}{4}$	82
68 720	$8\frac{1}{2}$ "	$\frac{3}{4}$	DC	230	.....	1725	$\frac{3}{4}$	82
68 910	$8\frac{1}{2}$ "	1	DC	115	.....	1725	$\frac{3}{4}$	90
68 912	$8\frac{1}{2}$ "	1	DC	115	.....	1140	$\frac{3}{4}$	90
68 920	$8\frac{1}{2}$ "	1	DC	230	.....	1725	$\frac{3}{4}$	90
68 922	$8\frac{1}{2}$ "	1	DC	230	.....	1140	$\frac{3}{4}$	90

THREE PHASE MOTORS

Do not have switch, cord or plug as motor must be connected in conduit by an electrician. Have Sealed-for-Life Ball Bearings which require no lubrication. Double shafts. $\frac{1}{2}$ H. P. 3 phase motors in 6 inch frame cannot be used on 17 inch drill press.



66 110	6"	$\frac{1}{3}$	AC	220	50/60	1425-1725	$\frac{1}{2}$	31
66 320	6"	$\frac{1}{2}$	AC	220/440	50/60	1425-1725	$\frac{1}{2}$	33
66 321	6"	$\frac{1}{2}$	AC	220/440	50/60	2850-3450	$\frac{1}{2}$	33
*66 362	6"	$\frac{1}{2}$	AC	220/440	25	1425	$\frac{1}{2}$	33
66 520	$8\frac{1}{2}$ "	$\frac{1}{2}$	AC	220/440	50/60	1425-1725	$\frac{3}{4}$	60
66 522	$8\frac{1}{2}$ "	$\frac{1}{2}$	AC	220/440	50/60	960-1140	$\frac{3}{4}$	60
*66 562	$8\frac{1}{2}$ "	$\frac{1}{2}$	AC	220/440	25	1425	$\frac{3}{4}$	60
66 720	$8\frac{1}{2}$ "	$\frac{3}{4}$	AC	220/440	50/60	1425-1725	$\frac{3}{4}$	80
*66 762	$8\frac{1}{2}$ "	$\frac{3}{4}$	AC	220/440	25	1425	$\frac{3}{4}$	80
66 920	$8\frac{1}{2}$ "	1	AC	220/440	50/60	1425-1725	$\frac{3}{4}$	85
66 921	$8\frac{1}{2}$ "	1	AC	220/440	50/60	2850-3450	$\frac{3}{4}$	66
66 922	$8\frac{1}{2}$ "	1	AC	220/440	50/60	960-1140	$\frac{3}{4}$	85
66 960	$8\frac{1}{2}$ "	1	AC	220/440	25	1425	$\frac{3}{4}$	85
67 120	$8\frac{1}{2}$ "	$1\frac{1}{2}$	AC	220/440	50/60	1425-1725	$\frac{3}{4}$	80
67 360	Nema 225	3	AC	220/440	25	1425	1	133
67 320	Nema 225	3	AC	220/440	50/60	1425-1725	1	133
67 420†	Nema 225	3	AC	220/440	50/60	1425-1725	1	133

*These motors not carried in stock, delivery requires 10 to 16 weeks after receipt of order. †Fully enclosed motors.

For motor recommendations see listing of individual machines.

Only $\frac{1}{3}$ or $\frac{1}{2}$ H. P. motors in 6 inch frame should be specified for use on 14" drill presses. Do not use $\frac{1}{4}$ H.P. motors for this service.

NOTE—We can supply direct-current and alternating current motors in a wide variety of voltages and frequencies in addition to the standard motors listed here. Write for specifications and prices.

PRICE LIST FOR BULLETIN A-20 DELTA-MILWAUKEE CUT-OFF MACHINES

Effective June 1, 1946

Prices shown in this list supersede those quoted previous to September 20, 1941. All prices subject to change without notice. The right is reserved to make changes in design or equipment at any time, without incurring any obligation to install these on machines previously sold. Any sales tax or other tax imposed subsequent to the publication of this price list will be additional to quoted prices. All prices are in accordance with O. P. A. regulations or less.

Delta-Milwaukee machines and accessories are sold through authorized dealers only. If you do not know your Delta Dealer, we will send you a list, or consult the classified section of your local telephone book under TOOLS.

All prices f.o.b. Factory, Milwaukee, Wisconsin

CATALOG No.	SELLING PRICE	CATALOG No.	SELLING PRICE	CATALOG No.	SELLING PRICE
Page 2		Page 3		Page 4	
20-210.....	\$175.00	20-305.....	\$182.00	17-840.....	Discontinued
1600.....	108.00	1600.....	108.00	17-841.....	
1606.....	3.25	1610.....	17.50	17-842.....	
1610.....	17.50	1632.....	8.00	17-843.....	
1399.....	43.00	1634.....	2.90	20-840.....	42.50
294.....	1.10	1399.....	43.00	1608.....	4.00
20-211.....	175.00	289.....	1.00	COS-382-S..	16.80
1600.....	108.00	1626.....	21.50	COS-383-R..	30.00
1604.....	3.25	20-810.....	13.00	20-815.....	2.75
1610.....	17.50	1633.....	2.90	20-816.....	2.75
1399.....	43.00	Motors:		Motors:	
501.....	1.25	97-320.....	91.25	97-320.....	91.25
Motors:		97-360.....	145.00	97-420.....	101.00
97-320.....	91.25	1328.....	12.00	97-360.....	145.00
97-360.....	145.00	49-520.....	95.00	84-910.....	57.75
1328.....	12.00	49-524.....	95.00	84-920.....	60.00
294.....	1.10	49-521.....	95.00	84-940.....	77.75
501.....	1.25	49-522.....	110.00	86-920.....	57.50
1615.....	2.75	49-523.....	110.00	86-960.....	75.50
1616.....	2.75	49-529.....	7.40	87-120.....	71.50
1617.....	2.75	49-530.....	3.00	88-910.....	87.00
1619.....	2.25	20-837.....	6.50	88-920.....	87.00
1609.....	5.00			1320.....	8.25
1605.....	3.25			1328.....	12.00
294.....	1.10			1329.....	16.00
1018.....	7.25			1321.....	16.00
1015.....	7.25				
1016.....	11.25				
Motors:					
For Wood Cutting					
84-910.....	57.75				
86-920.....	57.50				
88-910.....	87.00				
87-120.....	71.50				

THESE MACHINES ARE SOLD THROUGH AUTHORIZED DELTA DEALERS ONLY.

† New Coolant Pumps

Old Catalogue No. 17840 is superseded by Catalogue No. 49610.....	SELLING PRICE
Old Catalogue No. 17841 is superseded by Catalogue No. 49612.....	\$54.00
Old Catalogue No. 17842 is superseded by Catalogue No. 49614.....	54.00
Old Catalogue No. 17843 is superseded by Catalogue No. 49614.....	69.00
Each of the above pumps requires 1—16 gal tank Catalogue No. 49618.....	69.00
	10.00



The Delta Manufacturing Company • Milwaukee 1, Wis.

A Subsidiary of ROCKWELL MANUFACTURING COMPANY

Form AD-334 — June 1946

PRINTED
IN
U.S.A.

THE UNIVERSITY OF CHICAGO
LIBRARY

1951

The University of Chicago Library
has received a copy of the
report of the Committee on
the Status of the
University of Chicago
Library.

1951

1951

1951

1951

1951

1951

1951

1951



The major job we all have to do now is to produce for the protection of the United States. We are doing this to the fullest possible extent, and a large part of our production of machines is for the needs of the defense industries.

This, unfortunately, will curtail shipment of certain machines and accessories to customers not engaged in defense work. We know you will appreciate the necessity of this, and ask your complete cooperation in expediting the forwarding of preference-rating certificates, where required, so that we may continue to serve you to the fullest possible extent.

Effective September 20, 1941

Prices shown in this list supersede those quoted previous to September 20, 1941. All prices subject to change without notice. The right is reserved to make changes in design or equipment at any time, without incurring any obligation to install these on machines previously sold. Any sales tax or other tax imposed subsequent to the publication of this price list will be additional to quoted prices.

Catalog No.	Selling Price	Catalog No.	Selling Price	Catalog No.	Selling Price	Catalog No.	Selling Price	Catalog No.	Selling Price
Page No. 6		Page No. 8 Cont.		Page No. 11 Cont.		Page No. 12 Cont.		Page No. 16 Cont.	
30 100.....	\$.90	*64 510.....	\$ 36.50	*1588.....	\$85.25	*1028.....	\$ 6.95	508.....	\$ 7.00
30 103.....	.90	*66 520.....	40.00	*989.....	54.00	*1029.....	6.95	514.....	1.85
*64 710.....	43.25	*68 510.....	45.75	*1589.....	69.75	271.....	.90	515.....	1.85
*68 710.....	55.50	*64 710.....	43.25	*1590.....	73.50	272.....	.90	516.....	1.85
*64 910.....	49.75	*66 720.....	46.00	*1591.....	89.25	273.....	.95	518.....	1.85
*66 920.....	49.50	*68 710.....	55.50	*1286.....	52.50	Page No. 13		524.....	.50
*68 910.....	75.00	*64 910.....	49.75	*1886.....	68.25	*1540.....	225.00	525.....	.50
*P-1370.....	177.00	*66 920.....	49.50	*1887.....	72.00	*1541.....	217.00	526.....	.50
*P-1382.....	188.00	*68 910.....	75.00	*1888.....	87.75	*1550.....	430.00	976.....	5.85
*P-1376.....	183.00	*968.....	8.00	*1289.....	56.50	*1551.....	414.00	1381.....	7.25
*P-1383.....	194.00	*1311.....	3.00	*1889.....	72.25	*1542.....	230.00	634.....	1.85
*P-1370-H.....	177.00	*1312.....	3.00	*1890.....	76.00	*1543.....	222.00	636.....	1.85
*P-1382-H.....	188.00	Page No. 9		*1891.....	91.75	*1552.....	440.00	638.....	1.85
*P-1376-H.....	183.00	*1545.....	400.00	60 310.....	16.75	*1553.....	424.00	1024.....	3.85
*P-1383-H.....	194.00	*1546.....	412.00	*62 110.....	23.50	*60 310.....	16.75	1025.....	5.25
*P-1375.....	211.00	*1555.....	750.00	*66 110.....	24.00	*62 110.....	23.50	1026.....	8.50
*P-1377.....	217.00	*1556.....	774.00	*68 110.....	29.75	*66 110.....	24.00	*990.....	52.00
*P-1375-H.....	211.00	*1547.....	400.00	*62 110.....	23.50	*68 110.....	29.75	*996.....	65.00
*P-1377-H.....	217.00	*1548.....	412.00	*66 320.....	29.50	*68 110.....	29.75	*1362.....	70.00
*P-1545.....	530.00	*1557.....	750.00	*68 110.....	29.50	*62 110.....	23.50	*1363.....	95.00
*P-1546.....	542.00	*1558.....	774.00	*68 110.....	29.75	*66 320.....	29.50	804.....	1.25
*P-1555.....	1010.00	*1558.....	774.00	*1006.....	23.50	*68 110.....	29.75	805.....	1.35
*P-1556.....	1034.00	*64 510.....	36.50	*1007.....	15.75	*66 320.....	29.50	806.....	1.45
*P-1547.....	530.00	*66 520.....	40.00	Page No. 12		*68 110.....	29.75	807.....	1.60
*P-1548.....	542.00	*68 510.....	45.75	*1000.....	44.50	*970-B.....	37.00	808.....	1.80
*P-1557.....	1010.00	*64 710.....	43.25	*999.....	48.50	*1289-A.....	39.50	809.....	1.95
*P-1558.....	1034.00	*66 720.....	46.00	*1011.....	78.00	*970-C.....	33.00	810.....	2.25
*P-1378.....	129.50	*68 710.....	55.50	*1013.....	74.00	*1286-A.....	35.50	812.....	2.75
*P-1379.....	135.50	*64 910.....	49.75	995.....	+	*1010.....	.75	818.....	14.40
*P-1379-H.....	135.50	*66 920.....	49.50	*1300.....	47.00	*1019.....	4.50	474.....	1.15
Page No. 8		*68 910.....	75.00	*1302.....	51.00	*1020.....	4.50	475.....	1.15
*1370.....	112.00	*1378.....	64.50	*1012.....	80.50	*1517.....	67.00	476.....	1.15
*1384.....	132.00	*1378-H.....	64.50	*1014.....	76.50	*1519.....	150.00	477.....	1.15
*1382.....	123.00	*1379.....	70.50	1295.....	+	387.....	1.00	478.....	1.25
*1386.....	143.00	*1379-H.....	70.50	60 310.....	16.75	430.....	1.00	480.....	5.50
*1376.....	118.00	*1366.....	8.50	*62 110.....	23.50	*1010.....	.75	814.....	3.65
*1385.....	138.00	*1367.....	9.25	*66 110.....	24.00	*1019.....	4.50	815.....	3.75
*1383.....	129.00	*1368.....	8.50	*68 110.....	29.75	*1020.....	4.50	816.....	4.35
*1387.....	149.00	*1399.....	36.00	*62 110.....	23.50	*1517.....	67.00	817.....	4.95
*1370-H.....	112.00	*1513.....	177.00	*66 320.....	29.50	*1519.....	150.00	819.....	6.35
*1384-H.....	132.00	*1515.....	340.00	*68 110.....	29.75	*1286-A.....	35.50	822.....	23.05
*1382-H.....	123.00	*1391.....	6.75	*62 110.....	23.50	*1010.....	.75		
*1386-H.....	143.00	501.....	1.15	*66 320.....	29.50	*1021.....	6.45		
*1376-H.....	118.00	520.....	1.15	*68 110.....	29.75	*1022.....	6.45		
*1385-H.....	138.00	*1372.....	16.50	*66 320.....	29.50	*1030.....	15.00		
*1383-H.....	129.00	*1380.....	12.00	*68 110.....	29.75	*1290.....	8.00		
*1387-H.....	149.00	*1371.....	20.00	969.....	1.50	*1399.....	36.00		
*1375.....	146.00	Page No. 11		*971.....	4.25	Page No. 15		Page No. 17	
*1377.....	152.00	*986.....	50.00	*972.....	8.00	*1504.....	25.00	*1600.....	102.00
*1375-H.....	146.00	*1586.....	65.75	*973.....	4.00	*1505.....	100.00	*1626.....	19.50
*1377-H.....	152.00	*1587.....	69.50	974.....	2.25	*1506.....	18.00	*1632.....	7.50
				*977.....	2.25			*1399.....	36.00
				*991.....	\$2.25	Page No. 16		*1610.....	16.50
						504.....	5.25	289.....	1.00
						505.....	5.25	*1634.....	2.65
						506.....	6.35	*1631-C.....	187.15
								*1631.....	165.00

*Orders for these items cannot be entered unless accompanied by preference-rating certificates.

Catalog No.	Selling Price	Catalog No.	Selling Price	Catalog No.	Selling Price	Catalog No.	Selling Price	Catalog No.	Selling Price
Page No. 17 Cont.		Page No. 19 Cont.		Page No. 24		Page No. 25 Cont.		Page No. 30 Cont.	
*1630.....	\$129.00	1661.....	\$ 5.25	890.....	\$ 63.75	*68 510.....	\$ 45.75	1166.....	\$ 4.25
*1625.....	18.50	1662.....	5.25	891.....	7.50	*64 710.....	43.25	865.....	1.95
*1624.....	18.50	1663.....	2.00	882.....	1.95	*66 720.....	46.00	530.....	1.15
*1608.....	3.75	1664.....	3.25	883.....	9.95	*68 710.....	55.50	5500.....	.90
*1633.....	2.65			568.....	1.15	*64 910.....	49.75	1175-C.....	107.25
*1607.....	3.25			5275.....	.55	*66 920.....	49.50	1175.....	79.55
*67 120.....	61.50	Page No. 20		892-C.....	84.85	*68 910.....	75.00	560.....	1.15
*67 320.....	78.50	1296.....	22.75	892.....	72.95			1163.....	1.35
*67 360.....	125.00			888-C.....	103.10			*64 510.....	36.50
1320.....	8.25	Page No. 21		888.....	91.20	Page No. 26		*66 520.....	40.00
1328.....	12.00	1240.....	56.00	861.....	.75	1426.....	25.00	*68 510.....	45.75
1329.....	16.00	1252.....	43.00	886.....	25.75	1432.....	9.95	*64 710.....	43.25
Page No. 18		1271.....	59.00	889... (3 for)	.35	149.....	.80	*66 720.....	46.00
*1600.....	102.00	1272.....	57.00	60 310.....	16.75	864.....	3.95	*68 710.....	55.50
*1399.....	36.00	1277.....	60.00	*62 110.....	23.50	1434-C.....	39.70	*64 910.....	49.75
*1610.....	16.50	1244.....	61.00	*66 320.....	29.50	1434.....	34.95	*66 920.....	49.50
294.....	1.10	1256.....	48.00	*68 110.....	29.75	*64 510.....	36.50	*68 910.....	75.00
*1606.....	3.00	1287.....	58.50	*66 320.....	29.50	*66 520.....	40.00		
*1601-C.....	160.80	1304.....	64.75	*64 510.....	36.50	*68 510.....	45.75		
*1601.....	138.00	1307.....	65.75	*68 510.....	45.75	*64 710.....	43.25		
*1608.....	3.75	1242.....	82.50	1032.....	1.50	*66 720.....	46.00	Page No. 33	
1615.....	2.45	1254.....	69.50	1033.....	1.50	*68 710.....	55.50	20 200.....	42.50
1616.....	2.45	1273.....	85.50	1034.....	1.50	*64 910.....	49.75	20 825.....	8.95
1617.....	2.45	1274.....	83.50	1036.....	1.50	*66 920.....	49.50	20 203.....	49.70
1619.....	2.00	1278.....	86.50	1038.....	1.75	*68 910.....	75.00	20 205.....	52.05
*67 120.....	61.50	1246.....	99.50	1040.....	1.75	1425.....	30.00	20 207.....	59.25
*67 320.....	78.50	1258.....	86.50	1045.....	1.80	1432.....	9.95	20 826.....	1.10
*67 360.....	125.00	1285.....	94.00	1046.....	1.80	149.....	.80	20 827.....	1.10
*1620.....	105.85	1305.....	91.25	1047.....	1.80	864.....	3.95	20 828.....	1.10
*1399.....	36.00	1308.....	92.25	1048.....	1.80	583.....	1.30	20 829.....	5.25
294.....	1.10	*1283.....	42.00	1050.....	1.95	5450.....	.80	20 830.....	3.25
*1605.....	3.00	1294.....	7.00	1052.....	1.95	1433-C.....	46.80	20 831.....	4.85
*1610.....	16.50	*1284.....	68.50	894.....	6.00	1433.....	42.05	20 836.....	20.95
*1621-C.....	164.65	1245.....	3.25	883.....	9.95	1429.....	32.00	30 136.....	1.15
*1621.....	141.85	1247.....	3.25	895.....	6.50	1428.....	1.75	325.....	3.00
1609.....	4.75	1267.....	3.75	532.....	1.35	1427.....	1.55	326.....	5.65
1018.....	3.85	*1250.....	6.00	533.....	1.35			334.....	3.00
*1627.....	10.50	1280.....	.40	534.....	1.35	Page No. 28		335.....	3.00
*64 910.....	49.75	1236.....	1.75	536.....	1.35	1450.....	112.00	*64 510.....	36.50
*66 920.....	49.50	1237.....	1.75	381.....	1.75	1455.....	12.00	*66 520.....	40.00
*68 910.....	75.00	1238.....	1.75	732.....	1.25	1454.....	5.50	*68 510.....	45.75
*67 120.....	61.50	3121.....	5.50	733.....	1.25	1471.....	13.25	*64 710.....	43.25
294.....	1.10	*1292.....	32.50	734.....	1.25	865.....	1.95	*66 720.....	46.00
501.....	1.15	1293.....	3.25	736.....	1.25	1450-C.....	144.70	*68 710.....	55.50
*1603.....	3.00	Page No. 23		781.....	1.75	291.....	.90	*64 910.....	49.75
*1604.....	3.00	*880.....	101.50	770.....	1.35	281.....	.85	*66 920.....	49.50
*1605.....	3.00	891.....	7.50	771.....	1.35	1451.....	1.40	*68 910.....	75.00
*1606.....	3.00	882.....	1.95	772.....	1.35			866.....	8.95
*1607.....	3.25	883.....	9.95	773.....	1.35			869.....	4.25
1320.....	8.25	387.....	1.00	774.....	1.75	Page No. 29		870.....	1.10
1328.....	12.00	568.....	1.15			1471.....	13.25	874.....	1.10
1329.....	16.00	718.....	1.00	Page No. 25		1473.....	1.35	875.....	1.80
Page No. 19		*881-C.....	124.05	1400.....	46.00	67 010.....	53.50	863.....	5.25
1650.....	100.00	*881.....	112.15	1401.....	6.85	65 010.....	53.50	867.....	2.75
1651.....	100.00	*887-C.....	142.30	1403.....	1.95	65 015.....	55.25	877.....	3.25
1652.....	103.00	*887.....	130.40	1410.....	2.85	67 060.....	70.25	230.....	+
1653.....	103.00	*861.....	.75	864.....	3.95	67 210.....	57.50	231.....	+
1670.....	116.00	886.....	25.75	1406.....	7.50	69 010.....	75.00	859.....	20.95
1671.....	116.00	889... (3 for)	.35	1411.....	9.95	69 011.....	75.00	267.....	15.85
1672.....	119.00	*62 110.....	23.50	560.....	1.15	1320.....	8.25	872.....	1.10
1673.....	119.00	*68 110.....	29.75	5500.....	.90	1329.....	16.00	868.....	3.95
1656.....	108.50	*66 320.....	29.50	1402-C.....	81.10	1459.....	1.50		
1676.....	124.50	*68 110.....	29.75	1402.....	55.55	1454.....	5.50	Page No. 34	
1654.....	114.50	*64 510.....	36.50	*1420.....	31.50			1017.....	3.75
1655.....	116.50	*66 720.....	46.00	1412.....	1.35	Page No. 30		1018.....	3.85
1674.....	130.50	*68 510.....	45.75	1413.....	1.45	1160.....	70.00	1015.....	3.75
1675.....	132.50	*1060.....	2.50	1414.....	1.35	891.....	7.50	1016.....	6.75
		*1062.....	2.50	1415.....	1.45	1173.....	9.00	333.....	13.50
		*1064.....	2.50	*64 510.....	36.50	1165.....	12.50	1161.....	1.35
				*66 520.....	40.00			1452.....	1.40

+DISCONTINUED.

*Orders for these items cannot be entered unless accompanied by preference-rating certificates.

Catalog No.	Selling Price	Catalog No.	Selling Price	Catalog No.	Selling Price	Catalog No.	Selling Price	Catalog No.	Selling Price
Page No. 34 Cont.		Page No. 38 Cont.		Page No. 41 Cont.		Page No. 44 Cont.		Page No. 45 Cont.	
223.....	\$ 1.50	865.....	\$ 1.95	83—Dz.....	\$.60	1180.....	\$ 34.00	D-10.....	\$.90
225.....	2.00	1168.....	13.50	Gross..	4.10	1181.....	9.25	D-11.....	.90
227.....	1.50	22 580.....	119.00	84—Dz.....	.45	1197.....	8.25	D-12.....	.90
228.....	1.50	20 829.....	5.25	Gross..	3.55	1190.....	1.40	D-13.....	.90
1165.....	12.50	20 830.....	3.25	85—Dz.....	.60	987.....	4.75	D-30.....	.90
1166.....	4.25	662.....	3.95	Gross..	4.10	430.....	1.00	D-31.....	.90
1470.....	6.75	22 580-C.....	131.45	86—Dz.....	.60	1185.....	1.70	D-50.....	.90
1156.....	5.95	*64 510.....	36.50	Gross..	4.10	1199-C.....	60.35	D-51.....	.90
1155.....	4.85	*66 720.....	46.00	87—Dz.....	.80	1199.....	54.20	D-70.....	.90
Page No. 35		*68 510.....	45.75	Gross..	5.50	1188.....	52.20	D-71.....	.90
1158.....	17.25	*64 710.....	43.25	88—Dz.....	.80	1183.....	6.25	Page No. 46	
1458.....	17.30	*66 920.....	49.50	Gross..	5.50	410.....	1.00	1342.....	4.50
20 836.....	20.95	*68 710.....	55.50	91—Dz.....	.55	Page No. 45		1192.....	4.50
267.....	15.85	*64 910.....	49.75	Gross..	3.90	D-100.....	1.65	1193.....	2.95
265.....	4.75	*68 910.....	75.00	92—Dz.....	.55	D-101.....	1.65	1194.....	2.95
1162.....	1.35	Page No. 41		Gross..	3.90	D-102.....	1.65	1195.....	3.30
1453.....	1.40	1440.....	35.15	93—Dz.....	.80	D-103.....	1.65	1196.....	4.10
20 828.....	1.10	1444.....	9.65	Gross..	5.50	D-106.....	1.65	1343.....	4.50
1521.....	.15	1442.....	4.85	94—Dz.....	.95	D-109.....	1.40	1186.....	10.50
245.....	.25	715.....	.85	Gross..	6.60	D-110.....	1.75	873.....	.45
1172.....	12.00	1204.....	.85	95—Dz.....	.60	D-120.....	1.65	982.....	+
1170.....	8.75	716.....	.85	Gross..	4.10	D-121.....	1.65	983.....	2.25
1171.....	.85	716.....	9.75	96—Dz.....	.60	D-123.....	1.40	Page No. 47	
247.....	2.75	1445-C.....	61.10	Gross..	4.10	D-124.....	1.40	930.....	37.25
250.....	2.75	1445.....	54.55	97—Dz.....	.55	D-125.....	1.65	1463.....	30.00
251.....	2.75	1446.....	2.75	Gross..	3.90	D-126.....	1.65	940.....	1.50
252.....	2.75	1447.....	4.50	98—Dz.....	.55	D-128.....	1.65	937.....	2.35
253.....	2.75	331.....	.95	Gross..	3.90	D-131.....	1.75	941-A.....	1.35
254.....	2.75	1443.....	1.45	58—Dz.....	.80	D-135.....	1.65	694.....	2.50
255.....	2.75	882.....	1.95	Gross..	5.50	D-136.....	1.65	521.....	1.15
256.....	2.75	1200.....	36.50	59—Dz.....	.80	D-137.....	1.65	932.....	1.55
257.....	2.75	1207.....	1.95	Gross..	5.50	D-138.....	1.65	950-C.....	77.65
258.....	2.75	1203.....	4.75	60—Dz.....	.60	D-104.....	1.65	950.....	70.10
259.....	2.75	715.....	.85	Gross..	4.10	D-105.....	2.00	931.....	13.50
261.....	2.75	1204.....	.85	61—Dz.....	.60	D-107.....	1.40	*62 110.....	23.50
263.....	2.75	716.....	9.75	Gross..	4.10	D-108.....	1.40	*68 110.....	29.75
264.....	2.75	1206-C.....	54.65	64—Dz.....	.80	D-127.....	1.40	*62 110.....	23.50
269.....	2.75	1206.....	48.20	Gross..	5.50	D-129.....	1.40	*66 320.....	29.50
Page No. 37		340.....	.95	65—Dz.....	1.35	D-130.....	1.65	*68 510.....	45.75
654.....	58.50	718.....	1.00	Gross..	13.25	D-139.....	1.40	1460.....	56.00
656.....	7.95	882.....	1.95	Page No. 43		D-132.....	.20	1463.....	30.00
661.....	8.25	60 110.....	+	1340.....	107.00	D-134.....	.20	940.....	1.50
662.....	3.95	60 310.....	16.75	1345.....	1.85	D-140.....	.20	937.....	2.35
560.....	1.15	*68 110.....	29.75	1347.....	2.00	D-141.....	.20	1461.....	3.75
5700.....	1.30	60 310.....	16.75	1348.....	3.95	D-150.....	.25	694.....	2.50
660-C.....	81.10	*66 110.....	24.00	1349.....	6.75	D-151.....	.25	932.....	1.55
660.....	68.90	*68 110.....	29.75	287.....	.85	1178.....	11.20	1465-C.....	97.65
666-C.....	90.65	1202.....	1.70	5710.....	2.30	1213.....	11.65	1465.....	87.55
666.....	86.70	715.....	.85	1340-C.....	124.70	1182.....	18.20	*64 510.....	36.50
667.....	25.75	1204.....	.85	1346.....	1.85	1184.....	18.15	*66 720.....	46.00
659.....	4.00	726.....	.75	65 080.....	53.75	1214.....	18.60	*68 510.....	45.75
132.....	3.00	727.....	.75	65 085.....	55.50	1210.....	1.10	Page No. 48	
663.....	14.00	728.....	.75	69 111.....	60.00	1211.....	1.35	933.....	1.30
1522.....	.25	729.....	.75	69 121.....	61.75	1212.....	1.75	934.....	1.30
302.....	2.95	730.....	.75	*66 921.....	49.50	D-152.....	.35	935.....	1.30
*62 110.....	23.50	731.....	.75	67 121.....	59.50	D-154.....	.35	940.....	1.50
*66 110.....	24.00	740.....	4.50	132.....	3.00	1190.....	1.40	144.....	1.45
*68 110.....	29.75	711.....	+	1320.....	8.25	978.....	.90	145.....	1.45
*62 110.....	23.50	841.....	.75	1329.....	16.00	979.....	.75	968.....	8.00
*66 320.....	29.50	842.....	.75	1325.....	9.75	980.....	24.45	166.....	+
*68 110.....	29.75	703.....	.85	1327.....	1.25	D-1.....	.90	936.....	1.10
*64 510.....	36.50	704.....	.85	Page No. 44		D-2.....	.90	937.....	2.35
*66 320.....	29.50	751.....	.75	65 080.....	53.75	D-3.....	.90	938.....	1.95
*68 510.....	45.75	752.....	.75	65 085.....	55.50	D-4.....	.90	692.....	1.25
Page No. 38		753.....	.75	*66 921.....	49.50	D-20.....	.90	690.....	.85
1164.....	146.50	754.....	.75	69 111.....	60.00	D-21.....	.90	695.....	1.50
1165.....	12.50	755.....	.75	69 121.....	61.75	D-40.....	.90	694.....	2.50
1166.....	4.25	756.....	.75	134.....	5.00	D-41.....	.90	697.....	9.00
1176.....	3.95	757.....	.75	1320.....	8.25	D-60.....	.90	941.....	1.35
1177.....	2.25	758.....	.75	1329.....	16.00	D-61.....	.90	941-A.....	1.35
662.....	3.95	760.....	6.00	1322.....	1.25	D-62.....	.90	1461.....	3.75
1164-C.....	173.40	81—Dz.....	.60	1116.....	4.25	D-63.....	.90		
		Gross..	4.10	1325.....	9.75	D-69.....	1.25		
		82—Dz.....	.60			D-80.....	.90		
		Gross..	4.10						

†DISCONTINUED.

*Orders for these items cannot be entered unless accompanied by preference-rating certificates.

Catalog No.	Selling Price	Catalog No.	Selling Price	Catalog No.	Selling Price	Catalog No.	Selling Price	Catalog No.	Selling Price
Page No. 48 Cont.		Page No. 50 Cont.		Page No. 51 Cont.		Page No. 54 Cont.			
948.....	\$ 5.50	838.....	\$ 1.00	871.....	\$ 2.75	*64 910.....	49.75		
948-A.....	5.50	840.....	†	983.....	2.25	*64 920.....	51.50		
1468.....	5.50	841.....	.75	1131.....	.75	*64 940.....	66.75		
163.....	†	842.....	.75	1132.....	.25	*68 110.....	29.75		
164.....	2.15	847.....	.90	1133.....	.30	*68 120.....	30.75		
3114.....	1.65	679.....	.85	864.....	3.95	*68 310.....	41.75		
116.....	1.75	682.....	.60	865.....	1.95	*68 320.....	42.75		
3113.....	1.25	683.....	.60	873.....	.45	*68 510.....	45.75		
3115.....	1.50	680.....	.95	Page No. 52		*68 511.....	57.75		
113.....	.85	684.....	.60	353.....	1.00	*68 520.....	47.50		
111.....	1.40	685.....	.60	101—Qt.....	1.15	*68 521.....	59.50		
951.....	2.50	681.....	1.20	1 Gal.....	2.10	*68 710.....	55.50		
347.....	†	686.....	.85	1 Gal.....	4.10	*68 720.....	57.25		
347-A.....	†	687.....	.85	102—Qt.....	1.15	*68 910.....	75.00		
155.....	1.95	Page No. 51		1 Gal.....	2.10	*68 912.....	86.00		
157.....	1.65	5200.....	.50	1 Gal.....	4.10	*68 920.....	75.00		
180.....	1.75	5225.....	.50	103—Qt.....	1.45	*68 922.....	86.00		
344.....	†	5250.....	.55	1 Gal.....	2.75	*66 110.....	24.00		
945.....	15.25	5275.....	.55	1 Gal.....	5.40	*66 320.....	29.50		
121.....	1.75	5300.....	.65	100—1/2 Pt.....	.50	*66 321.....	34.50		
122.....	1.95	5350.....	.65	1 Gal.....	2.40	*66 362.....	40.75		
123.....	1.45	5400.....	.65	1 Gal.....	4.50	*66 520.....	40.00		
124.....	1.45	5450.....	.80	109.....	.50	*66 522.....	51.75		
125.....	1.55	5500.....	.90	110.....	6.00	*66 562.....	55.00		
126.....	1.55	5550.....	1.00	370.....	2.75	*66 720.....	46.00		
127.....	1.45	5600.....	1.10	374.....	.30	*66 762.....	62.50		
128.....	1.45	5650.....	1.20	379.....	1.25	*66 920.....	49.50		
130.....	12.60	5700.....	1.30	380.....	.75	*66 921.....	49.50		
138.....	1.10	5710.....	2.30	372.....	.50	*66 922.....	59.50		
140.....	1.10	5800.....	1.65	192.....	.25	*66 960.....	65.00		
141.....	1.10	6100.....	2.30	194.....	.10	*67 120.....	61.50		
118.....	1.10	6200.....	3.30	942.....	.25	*67 360.....	125.00		
120.....	†	281.....	.85	949.....	.75	*67 320.....	78.50		
151.....	2.50	284.....	.90	1520.....	.35	*67 420.....	87.00		
143.....	†	289.....	1.00	1521.....	.15	Page No. 55			
696.....	1.35	291.....	.90	1522.....	.25	*66 321.....	34.50		
192.....	.25	294.....	1.10	1523.....	.50	*62 210.....	29.50		
958.....	5.50	331.....	.95	1524.....	.35	*62 215.....	30.50		
Page No. 49		340.....	.95	1525.....	.30	65 080.....	53.75		
1466.....	97.50	355.....	.95	1526.....	.25	65 085.....	55.50		
952-A.....	80.05	387.....	1.00	1527.....	.35	*66 921.....	49.50		
1464.....	11.50	410.....	1.00	1528.....	.15	67 121.....	59.50		
965.....	25.00	430.....	1.00	1529.....	.35	69 111.....	60.00		
965-A.....	25.00	453.....	1.00	1530.....	.30	69 121.....	61.75		
1462.....	27.50	501.....	1.15	1531.....	.35	65 010.....	53.50		
1467.....	2.50	510.....	1.15	1532.....	.20	65 015.....	55.25		
962.....	4.00	520.....	1.15	1533.....	.15	67 010.....	53.50		
966.....	1.65	521.....	1.15	1534.....	.10	67 060.....	70.25		
1491.....	2.35	530.....	1.15	Page No. 54		67 210.....	57.50		
939.....	1.50	560.....	1.15	60 110.....	†	69 010.....	75.00		
1492.....	2.75	568.....	1.15	60 120.....	12.50	69 011.....	75.00		
1493.....	2.75	583.....	1.30	60 310.....	16.75	132.....	3.00		
1494.....	2.75	588.....	1.30	60 325.....	17.75	1115.....	1.35		
1495.....	3.85	595.....	1.45	60 350.....	22.75	1116.....	4.25		
1496.....	12.10	618.....	1.45	*62 110.....	23.50	1325.....	9.75		
1490.....	6.50	644.....	1.50	*62 120.....	26.50	1320.....	8.25		
Page No. 50		670.....	1.50	*62 140.....	34.75	1328.....	12.00		
640.....	16.00	673.....	1.55	*62 210.....	29.50	1329.....	16.00		
641.....	23.50	750.....	2.00	*62 215.....	30.50	1117.....	.75		
830.....	†	882.....	1.95	*62 510.....	32.00	1119.....	1.35		
831.....	1.10	1134.....	.25	*62 520.....	33.00	1322.....	1.25		
832.....	1.10	1135.....	.25	*64 510.....	36.50	1327.....	1.25		
833.....	1.35	S-8.....	.20	*64 520.....	38.25	1459.....	1.50		
835.....	†	SBS-50-S.....	.60	*64 540.....	50.50	1330.....	.55		
836.....	.90	718.....	1.00	*64 710.....	43.25	1331.....	.55		
837.....	.90	720.....	1.35	*64 712.....	59.25	1332.....	.55		
		932.....	1.55	*64 720.....	45.00	1333.....	.55		
		985.....	1.55			1334.....	.55		

†DISCONTINUED.

*Orders for these items cannot be entered unless accompanied by preference-rating certificates.

NOTE—Due to the defense program it is impossible to supply an adequate number of motors, and to fill your orders with the least possible delay we frequently must ship capacitor motors in place of Rep.-Ind. motors, and vice versa. The characteristics and specifications of these motors including horsepower, voltage and frequency are the same.

THE DELTA MANUFACTURING CO.

DELTA
MILWAUKEE

600-634 E. Vienna Ave., Milwaukee, Wis.